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NAVAL POSTGRADUATE SCHOOL

MONTEREY, CALIFORNIA

THESIS

EMERGENCY RESPONDER PERSONAL PREPAREDNESS

by

Chris A. Kelenske

December 2011

Thesis Advisor:
Second Reader:

Pat Miller
Phillip D. Schertzing

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EMERGENCY RESPONDER PERSONAL PREPAREDNESS

Chris A. Kelenske
First Lieutenant, Michigan State Police
B.S., Grand Valley State University, 1993

Submitted in partial fulfillment of the
requirements for the degree of

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from the

**NAVAL POSTGRADUATE SCHOOL
December 2011**

Author: Chris A. Kelenske

Approved by: Pat Miller
Thesis Advisor

Phillip D. Schertzing, PhD
Second Reader

Daniel Moran, PhD
Chair, Department of National Security Affairs

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ABSTRACT

Citizens have an expectation that emergency responders will come to their aid during emergencies. There is the general assumption that these responders and the agencies they work for are prepared for any type of event. With a core element of any disaster response being the capability of the emergency responders, a lack of personal preparedness by emergency response personnel is likely to be highly detrimental and reduces this capability when responders are needed to respond to a catastrophic event. Past incidents and research has indicated that emergency responders may not respond until they ensure their own families safety. Emergency responders do not have the option to assist *voluntarily* during a disaster—they must respond to ensure citizen safety and security while maintaining order.

This research used a nationwide survey of emergency responders to determine why emergency responders are not personally prepared and what factors may influence increasing their personal preparedness level. The result of this research identified three reasons why emergency responders do not personally prepare for disasters and concludes with recommendations that involve five incentives or motivations on how emergency response agencies can increase personal preparedness among their personnel.

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LIST OF ACRONYMS AND ABBREVIATIONS

CERT	Community Emergency Response Training
CHDS	Center for Homeland Defense & Security
DHS	Department of Homeland Security
EAS	Emergency Alert System
EPPM	Extended Parallel Process Model
ERRGP	Emergency Responder Resilience Grant Program
HSEEP	Homeland Security Exercise & Evaluation Program
HSGP	Homeland Security Grant Program
HSPD	Homeland Security Presidential Directive
LETPP	Law Enforcement Terrorism Prevention Program
NATO	North Atlantic Treaty Organization
NLE	National Level Exercise
NOPD	New Orleans Police Department
NRF	National Response Framework
NRP	National Response Plan
PDP	Citizen Corp Personal Behavior Change Model for Disaster Preparedness
PPD	Presidential Policy Directive
SMS	Short Message Service
TASER	Tomas A. Swift's Electric Rifle (Electronic control device that causes neuro-muscular incapacitation typically used by law enforcement personnel)
TCL	Target Capabilities List

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I. INTRODUCTION

The topic of emergency responder personal preparedness has not received as much attention as other homeland security and emergency management initiatives. Prior research has shown that the general public has abdicated their safety and security to emergency responders in the initial 72 hours after catastrophic events or disasters. Responders are expected to be prepared in order to respond to any type of event. In order for the response to be effective and successful emergency responders need core preparedness, protection, response, and recovery capabilities. A core component of these capabilities is personal preparedness. Prior research and a failure of responders to show up to work during past disasters suggest that emergency responders are not adequately personally prepared for disasters. This research will initiate findings and be an impetus to future research on this topic.

The research presented contains six chapters: 1) Introduction; 2) Literature Review; 3) Preparedness; 4) Research Methodology and Design; 5) Results and Analysis; and 6) Conclusion.

The introduction chapter outlines the research question as well as the thesis argument, problem statement, and practical significance of the research. The practical significance of the research focuses on the development of further literature on emergency responder personal preparedness, future research to be conducted, who the immediate consumers of this research are, and how this research will benefit homeland security practitioners and leaders nationally.

Chapter II, the literature review, provides an examination of four topic areas. These include government documents, Hurricane Katrina case study, books, and prior research and theses applicable to this topic.

The third chapter explores three sections of preparedness. The first section briefly examines the question, “What is preparedness?” from the Civil Defense Act of 1950 to the present. The second section provides a comparative analysis between the United States and Israeli preparedness and the final section examines aspects of the psychology

of preparedness. This last section also reviews the Citizen Corp personal behavior change model for disaster preparedness (PDP) and associated theories and models. The chapter aims to demonstrate how a community approach to behavior change may increase responder personal preparedness.

In Chapter IV, the methodology of the research is presented. It explains the purpose of the research, how the research was conducted, the survey tool, and structure used to gather the data, as well as the survey population.

The results and analysis of the research is presented in Chapter V. Each question from the survey is accompanied with an analysis of each as appropriate. Tables and graphs are displayed to assist with providing a clear understanding of the survey results and analysis.

The final chapter is the conclusion and outlines six recommendations. The reasons why emergency responders are not prepared in addition to the incentives or motivators to increase personal preparedness are also presented.

A. RESEARCH QUESTIONS

Given the amount of homeland security money and preparedness programs that have been made available to emergency responders since September 11, 2001, why have some emergency response personnel still failed to prepare themselves and their immediate family members adequately for a major disaster? Are there locations in the United States where emergency response personnel and their families or specific disciplines (police, fire, emergency medical services [EMS]) are more prepared?

B. THESIS ARGUMENT

The claim is that it is not known why emergency responders are not personally prepared even though personal preparedness programs such as *Ready Responder* have been created. Knowing why emergency responders have not created personal

preparedness kits and plans will help to identify what incentives are needed to increase the emergency responders' personal preparedness before a disaster occurs which leads to an increase in their effectiveness during disasters.

This is important because if the question *why emergency responders are not prepared* is not answered, the programs created to prepare them will not be effectively implemented. This will lead to a cascading effect during disasters that causes confusion, chaos, and uncertainty among emergency responders. Sixty one percent of a population surveyed in a Federal Emergency Management Agency (FEMA) Citizen Corp study stated those citizens rely on help from police, fire, and emergency personnel during the first 72 hours of a disaster (FEMA, 2009, p. 22).

The *Ready Responder* program provides the templates and information needed to get emergency responders personally prepared; however, without knowing the incentives needed to implement the program from the responders' perspective, these templates and information will be and in some cases have been disregarded. If responders do not have personal preparedness plans in place and a disaster occurs they will either: 1) be less effective on duty due to being worried about whether or not their family was able to evacuate, shelter in place properly, or be appropriately protected; or 2) the emergency responder will leave work or fail to show up for work in order to properly care for their family.

The evidence to support this was witnessed during the 2005 Hurricane Katrina when police officers of the New Orleans Police Department (NOPD) failed to show up at work due to potential personal preparedness matters (Deflem & Sutphin, 2009). Additionally, a study by Martin deMassi of the Payson, Arizona Fire Department revealed a majority of emergency responders surveyed had not created a personal preparedness plan but if they did have a plan, it would positively affect their response (n.d.).

One assumption is that emergency responders' do not personally prepare due to a lack of frequent disasters, major disasters, or the potential of significant disasters occurring where they live or work. Additionally, emergency responders may not think

about personal preparedness, do now know what to do, how to do it or feel it is too costly and difficult to create personal preparedness plans. Furthermore, it is assumed that a lack of preparedness funding dedicated to emergency responder preparedness initiatives as well as no personal preparedness policies or requirements by emergency response agencies negatively affect what level of personnel preparedness is in place.

Understanding why emergency responders are not personally prepared will assist with personal preparedness processes needed to increase the responder personal preparedness level nationwide. These methods will be outlined in the recommendations and concluding chapter of the research. The assumption is that some form of incentives need to be incorporated with a preparedness program for emergency responders.

C. PROBLEM STATEMENT

When citizens need assistance, they are taught to call 9-1-1 and emergency responders go to their aid. There is the general assumption that these responders and the agencies they work for are prepared for any type of event. A core element of any disaster response is the capability of the emergency responders. A lack of personal preparedness by emergency response personnel is likely to be highly detrimental and reduces this capability when responders are needed to respond to a catastrophic event. Currently, there is a lack of information and data indicating *why* emergency responders and their families are not adequately personally prepared for disasters.

While at the Iowa Homeland Security Conference in 2006, DHS Undersecretary of Preparedness, George Foresman, asked 400 local and state emergency management officials how many of them had “detailed personal and family disaster plans” with only five of the 400 of these “trusted experts” indicating they “were as prepared as they advise (d) everyone else to be” (Emergency Preparedness Institute, 2007, p. 3). A survey of public safety personnel by Martin deMassi (n.d.) of the Payson, Arizona Fire Department revealed that 82 percent of the public safety officials he surveyed had not completed a preparedness plan. Additionally, deMassi noted that 78 percent of the respondents agreed that the “existence of a preparedness plan would positively affect their willingness to respond to an incident” (n.d., p. 24).

The lack of personal preparedness by responders was evident in 2005 during Hurricane Katrina. Two hundred fifty officers of the New Orleans Police Department left the area and failed to show up at work in order to potentially take care of their families (Deflem & Sutphin, 2009). This is understandable given the situation faced by the responders. From their viewpoint, they “not only faced a loss of work-related facilities, but also had to deal with their own personal losses, including the destruction of their homes and suffering of family members” (Deflem & Sutphin, 2009, p. 45).

According to the Emergency Preparedness Institute (2007), there is a suggestion that “fear and apathy play a major role in the apparent lack of preparedness actions taken” (p. 14). The institute further asserts that some of the major reasons for failing to prepare are that people “1) do not think about it, 2) are not concerned that an event will impact them, 3) do not know what to do, or 4) feel that preparedness takes too much time and/or costs too much money” (2007, p.14). The Citizen Emergency Response Team (CERT) training and FEMA Are You Ready campaign are geared toward increasing *voluntary* citizen preparedness as well as *voluntary* citizen response capability. Emergency responders do not have the option to assist during a disaster *voluntarily*—they must respond to ensure citizen safety and security while maintaining order. General citizen preparedness is not sufficient for responders or their family members to ensure personal preparedness. The added stress of being required to help others when one is not being helped or not prepared will affect response.¹

There are negative consequences for failing to address a lack of emergency responder and responder family preparedness. A 2005 study by Thomas Nestel, utilizing the 15 National Planning Scenarios, revealed “55–66 percent of police officers reported they would refuse to adhere to an emergency recall or would consider abandoning their position based upon concerns for the safety of their family” (as cited in Landahl & Cox,

¹ During Hurricane Katrina, according to Gebaurer (as cited in Deflem & Sutphin, 2009, p. 44), “some 250 officers of the NOPD were reported to have deserted the city during the storm. At least two NOPD officers committed suicide.”

2009, p. 3). Additional studies² support the notion of a lack of ability of the responders to respond effectively, due to concerns for their family's safety. If a large number of emergency responders are absent or assisting their families during a disaster, then the affected areas are more vulnerable to the criminal element as well as civil disorder. Furthermore, without responders to assist citizens in need, an increase in injuries and deaths may occur.

Currently, no specific guidance is given in the Target Capabilities List (TCL) to "deal directly with the individual and family preparedness of responders" (Landahl & Cox, 2009).

D. PRACTICAL SIGNIFICANCE OF THE PROJECT

1. The Literature

As previously noted, there is limited literature on personal preparedness and emergency responders. By using the methodology described, a significant amount of information will be obtained on the personal preparedness of emergency responders (specifically law enforcement, fire, and EMS personnel). The intent is to identify those factors that may influence the responder's to achieve the appropriate personal preparedness level so they are more effective during disasters as well as increasing the probability they and their families are protected during these events. The information and data obtained will fill a research void that has been created on emergency responder personal preparedness.

2. Future Research Efforts

To assist with future research, additional data was collected, which took minimal time for participants to answer, yet provided the data needed for future analysis. For

² As cited in Landahl & Cox (2009), a study of National Capital Region (NCR) police officers conducted by Nancy Demme (2007) "revealed that family preparedness safety were determinant factors in the ability and willingness of police officers to respond for assignment in a biological incident" (p. 2). Another study by John Delaney (2008) of fire fighter's from the NCR, a study of healthcare workers by Kristine Qureshi and others (2005), and a study of Emergency Medical Technicians by Charles DiMaggio and others (2005) yielded similar results as Demme's 2007 study on police officers.

example, information relevant to future research on emergency responders risk perception associated with FEMA regions, counties within the regions, by number of Presidential Disaster Declarations (year 2000 to 2010), or frequency, magnitude, and type of disasters was collected. Additionally, the data obtained will allow for future research on the specific type of responder (law enforcement, fire, or EMS) as well as by rank/level within the agency or employment status. Particular interest may be shown by EMS research into differences between private and public EMS agencies.

3. The Immediate Consumer

The immediate consumers of this research will be those identified emergency responder agencies, their administrators, emergency management and homeland security directors, and training coordinators. By understanding why responders are not personally prepared, training programs may be designed and properly implemented around those identified reasons. The conclusions and recommendations will allow for proper planning for disaster response using relevant implementation and incentive methods.

4. Homeland Security Practitioners and Leaders Nationally

This research will assist emergency responders and their respective agencies in implementing personal preparedness programs. It provides information on why emergency responders are not personally prepared and identifies incentives for the program managers of the *Ready Responder* program that may increase preparedness levels and assist with program evolution.

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II. LITERATURE REVIEW

There is a significant amount of literature on citizen personal preparedness; however, personal preparedness efforts specifically geared toward first responders and their families is limited. The topic of responder/responder family preparedness, compared to citizen preparedness, has not received as much attention or funding as other homeland security and emergency management initiatives. This literature review examines emergency responder and responder family personal preparedness by examining the sub-literatures of 1) government documents; 2) books; 3) case studies; and 4) research and theses on this topic.

A. GOVERNMENT DOCUMENTS

The government documents within this literature review demonstrate the need and requirement for research on first responder preparedness. One federal document, the 2007 *National Strategy for Homeland Security* (Department of Homeland Security [DHS], 2007d), provides the guidance and scope of national preparedness. This strategy, in addition to the *FY 2010 Homeland Security Grant Program* (DHS, n.d.), stresses that preparedness is a core responsibility and funding is needed for state, local, tribal, and territorial governments to prepare for, prevent, respond to, and recover from all hazards—including potential terrorist attacks. Additional guidance on preparedness is found in the *National Response Framework* (NRF) (DHS, 2008b), which evolved from its predecessor, the *National Response Plan* (NRP) (DHS, 2004). While the evolution to the NRF has generally changed in name only, the updated name reflects its purpose, which is to frame or “define the key principles, roles, and structures that organize the way we respond as a Nation” (DHS, 2008, p. 1). All the above documents create the preparedness foundation for the United States in general but do not specifically focus on emergency responders and their family’s preparedness.

The *National Preparedness Guidelines* (DHS, 2007a) were created under Homeland Security Presidential Directive 8 (HSPD-8). The guideline provides the nation’s overall preparedness goal as well as introduces the tools, the *National Planning*

Scenarios (Homeland Security Council, 2006), the *Universal Task List* (DHS, 2007a), and the *Target Capabilities List* (DHS, 2007c), which are needed for the United States to be prepared for all hazards. A review of the tools reveals that the preparedness initiatives are too narrowly focused on community preparedness and participation and do not address responder and responder family preparedness. The 2007 *Target Capabilities List* (DHS, 2007c) is described in the literature as a “living document” (p. viii), which should permit it to be updated after future research and as new events occur.

A new *National Preparedness Goal* was released in September 2011 under a new administration. This Presidential Policy Directive 8: National Preparedness (PPD-8) seems to replace HSPD-8. PPD-8 describes the nation’s “security and resilience posture” through the core capabilities of prevention, protection, mitigation, response, and recovery (DHS, 2011, p. 1). Just as HSPD-8 provided the nation’s overall preparedness goal and tools to meet that goal, PPD-8 describes the nation’s approach to disaster preparedness. With implementation of PPD-8, the TCL appears to have evolved to capability targets which are defined as dynamic and can be refined. The response mission area capability and planning target is supposed to use a systematic process to meet defined objectives. This target is getting closer to meeting the appropriate emergency responder personal preparedness initiative that could move the personal preparedness needle closer to the critical objective of increasing responder personal preparedness. This research or future research may be the impetus to refine capability targets related to responder personal preparedness.

B. CASE STUDY

1. Hurricane Katrina

Case study literature that specifically addresses responder or responder family preparedness is limited. One disaster, Hurricane Katrina August 23, 2005, is used to demonstrate lessons learned among multiple disciplines. Regarding emergency responders, past case studies of disasters have focused on the management of critical incident stress post disaster. Deflem and Sutphin (2009) pointed out that responders are

required to help others but during a disaster will also have to deal with personnel tragedies during and immediately after the disaster (pp. 41–49). Additionally, the Louisiana Commission on Law Enforcement’s case study (Jackson, 2005) of Hurricane Katrina provides recommendations specific to law enforcement and identified the need for shelter sites and evacuation plans for first responder families. However, neither of these studies identified why responders were not personally prepared particularly when they were in a hurricane prone area.

In other case studies there are similar problems consistently noted: communications failures, disjointed command, and lack of pre-planning. Donahue and Tuohy (2006) analyzed 21 after action reports that provide a basis for their findings of why people do not learn from past mistakes. Additionally, they identify potentially key components of how to increase responder preparedness—incentives and changes in “structure, system, and culture” of the organization to adjust behaviors (Donahue & Tuohy, p. 21). Although their findings did not specifically address responder preparedness, their analysis could very well be applied to this topic.

C. BOOKS

As with the case studies, books written on responder preparedness are narrow. One book, *Facing the Unexpected: Disaster Preparedness and Response in the United States*, by Tierney, Lindell and Perry (2001), provides a very thorough review of literature on disaster preparedness and response; however, the topic of what causes responders not to prepare for disasters or prepare at different levels is not adequately covered. In addition, the literature reviewed is mostly in the time frame of the 1970s thru the 1990s with a few publications from the year 2000. None of the literature reviewed by Tierney et al. (2001) is post September 11, 2001. The book does identify a few key concepts relevant to this research: (1) that while it is important to understand household preparedness it is equally important to understand preparedness for government organizations such as emergency response agencies; and (2) further research is needed to determine what motivates people to increase and sustain their preparedness levels.

An additional piece of literature read was the *Are You Ready?* guide from FEMA (2004). This is used in conjunction with FEMA's independent study course, IS-22. As was noted with previous pieces of literature, this is focused on citizen preparedness. The information contained in *Are You Ready?*, all hazards and basic preparedness, are applicable to everyone but it does not cover how emergency responders are affected by a lack of disaster preparedness or how they should implement a preparedness culture within their agency. The intent behind the book, why citizens prepare and developing citizen preparedness, is prefaced by information on the Community Emergency Response Team (CERT) training and Citizen Corp programs (Federal Emergency Management Agency [FEMA], 2004). The *Are You Ready?* (FEMA, 2004) guide was published in August 2004 and the *Ready Responder* (FEMA, 2010b) program was released in September 2010. The *Ready Responder* program appears to parallel FEMA's guide and may also provide valuable research material for this topic.

D. PRIOR RESEARCH AND THESIS

The most relevant literature on this topic has come from recent research and theses conducted. The Naval Postgraduate School alone has produced four theses relevant to this topic since 2006. These were conducted by Alicia Welch (2006), Annemarie Conroy (2008), Brian Sturdivant (2009), and Nicholas Campasano (2010).

Robert Hudson from the Portage Fire Department in Michigan wrote a research paper for the National Fire Academy focused on identifying "criteria for developing a guide for emergency responders and their families in the event of a multi-day deployment" (2005, p. 5). Hudson's research included two feedback instruments in the form of surveys: one for individual emergency responders and the other to department administrators. His conclusions are that pre-planning for an event minimizes those negative attributes that contribute to the decreased effectiveness of responders.

Sturdivant used a similar methodology as Hudson in that he used surveys and interviews; however, he branches out and breaks down his surveys and interviews by local level command officers, Naval Postgraduate cohort members with significant experience, and finally state and federal emergency management professionals from five

of the 10 FEMA regions. He concludes that in order to increase responder safety and effectiveness an increase in funding, support for a mega-community, using a military model for family support initiatives, and taking an all-hazards approach to preparedness is needed (2009).

Alicia Welch (2006) in her thesis noted that there are administrative barriers which have impeded preparedness efforts in the fire fighter culture. These barriers, as identified by Welch—complacency, indifference, ignorance, and conservatism—may also be factors that influence the law enforcement or EMS culture in their personal preparedness efforts. Her research, under the Naval Postgraduate School, and her yearlong fellowship with the Department of Homeland Security (DHS), has led to assisting the DHS roll out the *Ready Responder* program.

In reviewing Annemarie Conroy's thesis (2008) on citizen preparedness, it becomes clear that there has been a disproportionate amount of federal support for citizen personal preparedness versus emergency responder personal preparedness. Conroy adds to the other theses reviewed and supports how important preparedness is by stating, "In recognizing that 'more needs to be done' a clear understanding of who is and who is not prepared—AND WHY—is essential to any further national efforts" (2008, p. 12). Conroy identifies important components with citizen preparedness that will assist in researching why emergency responders do not personally prepare. It is the sociological and psychological factors, as discussed by Conroy, as well as the human behavior and disaster study by Dennis Mileti (n.d) that could assist in identifying that WHY factor.

Studies and polls have also been used to measure citizen preparedness; however, Annemarie Conroy (2008) noted in her research that these surveys and polls do not always measure what individuals have done versus how prepared they believe they are. This lack of a consistent measurement of preparedness is a concern if a poll or survey is completed during this research.

In Campasano's thesis (2010), he delves into the psychology of preparedness by reviewing and identifying limitations of the Citizen Corps personal behavior change model for disaster preparedness (PDP). He posits that preparedness programs have not

done enough to engage community members and that social influence is not a factor in the PDP. The result of his research is that individual and community behavior change theories are more appropriate to increase preparedness levels. These models, in addition to the PDP, need to be understood in order to effectively implement personal preparedness behavior change within the emergency responder culture.

Martin deMassi, Payson Fire Department in Arizona, also conducted surveys of 102 emergency responders from police and fire dependents; however, he states that the majority were from the town of Payson, which may make the results too localized for this thesis. Regardless, his surveys provide a snapshot of the number of responders who do not have a personal preparedness plan in place as well as factors that could entice them to do so and where the responsibility lies to implement such a program. The surveys and interviews by deMassi, Hudson, and Sturdivant as well as other research noted above are relevant to this research but none ask why responders have not prepared.

E. SUMMARY

As stated, there is limited literature that specifically relates to the personal preparedness of emergency responders. Recent research in the form of theses has provided the most relevant and timely information on this topic. The government documents make the assumption that emergency responders are or will be personally prepared for any incident, and therefore the literature focuses on preparedness efforts to be taken by the citizen population. Case study literature is also limited. The main case study is the response efforts during Hurricane Katrina. Additional data will be needed as using one case study from one region may not be indicative of a lack of responder personal preparedness nationwide or in other regions.

The number of books written on responder personal preparedness is minimal, which continues to indicate the need for further research on this topic. The thesis by Naval Postgraduate student, Alicia Welch (2006), was the impetus to creating the *Ready Responder* (FEMA, 2010b) program. While the program instructs what responders have to do to prepare personally, it does not provide data or reasons why emergency

responders do not prepare. Additionally, no data has been obtained to assist in answering the question why or to indicate if the problem is regional, discipline specific, or based on disaster frequency, potential magnitude of the incident, or both.

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III. PREPAREDNESS

In broad terms, disaster preparedness is planning, equipping, training, and exercising in order to create or sustain capabilities in order to prevent, protect against, mitigate, respond to, and recover from the effects of disasters. This chapter looks at the construct of preparedness as related to emergency responders, a review of preparedness efforts in Israel and the applicability of these efforts within the United States, and finally behavior change models and related theories are reviewed and analyzed to determine the most effective ways to improve and advance emergency responder personal preparedness.

A. WHAT IS PREPAREDNESS?

Not until after the attacks of September 11, 2001 did disaster preparedness once again become a priority for the United States. To protect against a military attack, basic preparedness principles were taught to citizens by means of the Civil Defense program in the 1920s under the Council of National Defense. The Federal Civil Defense Act of 1950 was the first comprehensive emergency planning legislation in the United States with the intent to “provide a system of civil defense for the protection of life and property in the United States” (Dynes, 1994, p. 142). While this was a potential mechanism to provide natural disaster assistance, this effort was more geared toward enemy attacks on the United States than disasters. After many evolutions of change, the Federal Emergency Management Agency and eventually the Department of Homeland Security took over these preparedness efforts and the preparedness focus shifted to natural disasters; however, with longer periods of time between catastrophic or harmful events “psychological and biological systems typically show the simple return to baseline” levels due to decay or dissipation (Bongar, Brown, Beutler, Breckenridge, & Zimbardo, 2007, p. 176). Staying at this baseline level without periodic damaging or frightening events citizens’ sense of vulnerability to these events decreases or creates complacency.

According to Klonglan et al., as cited by Gillespie and Streeter (1987, p. 155), there is a practical significance of preparedness in that it has the “potential to save lives and to increase control over disaster response activities.”

An August 2009 Citizen Corp National Survey, comparing 2003 results with 2009 results, indicate that actual preparedness and perceived preparedness are two very different things. While 57 percent of those surveyed reported having “supplies set aside in their home to be used only in the case of a disaster” less than 44 percent updated the supplies annually (FEMA, 2009, p. 7). Additionally, of the 57 percent who reported having supplies, there were few numbers of people who had complete supply kits which contain critical items such as “flashlights, radios, batteries, first aid kits, and personal documents” (FEMA, 2009, p. 7).

The survey results indicated reliance by the general public on emergency responders to help them during the first 72 hours of a disaster as well as this being a reason why they had not prepared for disasters (FEMA, 2009). However, in an interview conducted by Nancy Demme in 2007 as part of her Naval Postgraduate studies, one officer interviewed stated, “I always said that if something horrific happens, I’m not going. I’m going with my family” (Demme, p. 34). This reiterates the need to identify those willing and able to report for duty during a disaster. Response and recovery will be critically impacted without emergency responders to respond to the incident.

In order to measure preparedness it first must be defined and there is yet to be consensus on this definition among agencies, locations, or disciplines. However, consensus as to “what” preparedness represents may not be necessary. The construct of preparedness should be a standard set of categories while allowing agencies to choose what represents preparedness or what should be emphasized based on their needs. Because preparedness is pluralistic in nature, it should take into account four capabilities: (1) provisions or critical supplies, (2) skill-level, ones knowledge and ability to act during an emergency or disaster, (3) planning, how ones community or family will act in a coordinated manner, and (4) protection, being able to overcome, mitigate, or minimize the results of a disaster (Kirschenbuam, 2002, p. 17). For example, emergency responders in California would have a need for certain provisions, skills, planning

components, and protective measures for wildfire emergencies whereas responders in Michigan would have a need for these capabilities for severe winter storms versus wildfires. Both have a need for all four areas of capability, yet each has its own focus of where the emphasis is placed.

B. PERSONAL PREPAREDNESS AND THE ISRAELI MODEL

Israeli participation by the general public in exercises and drills has “played a significant role in allowing the public to familiarize itself with procedures and skills of emergency response and recovery” (Homeland Security Institute [HSI], 2009, p. 79). This approach of public participation could be applied to emergency responder families in the United States for all hazard preparedness; however, fully implementing public participation in the United States as Israel has done is not realistic due to significant factors specific to Israel. These factors include Israel’s proximity to border nations with the intent and capability to attack, a smaller country size and population than the United States, and a history of attacks against them. Israel has a more defense-based posture due to the threat of mortars, rockets, and annihilation by neighboring Arab armies versus the United States all hazards posture with a higher propensity for damage sustained from natural hazards. Implementing a personal preparedness and participation program with families of emergency responders is useful for planning, training, exercising, policy or procedure development, and is also accomplishable. Israel utilizes a public engagement program consisting of a series of national drills and protective measures to increase preparedness by the general public and foster more engagement between the emergency responders and the public. Emergency response agencies in the United States can do the same to increase engagement between the agency, the responders, and their families.

Using risk-based scenarios coupled with responder family participation in emergency readiness and preparedness training or drills, as the Israeli government has done, will assist in responders becoming more resilient and prepared for any disaster and minimizing the chances of cascading effects from those disasters.

Emergency responders and their families need to:

...vigilantly be prepared for large scale, mass-casualty events, including bioterrorism, airline disasters, and the use of conventional weapons in large urban areas. Should these events occur, emergency services personnel are tasked with unprecedented, enormous, and sustained personal and professional challenges. (American Psychological Association [APA] Task Force, n.d., p. 1)

The death of an emergency responder or family member is the worst potential outcome for any agency's personnel being unprepared. A lack of invested time, energy, or money should not dictate the next steps in responder personal preparedness efforts.

During the first Gulf War and again in 2003 prior to the United States and Iraq war, the Israeli government required certain levels of preparedness. They issued four million gas masks and antidotes (atropine injections) for nerve agents to its citizens to increase the citizen's preparedness level and their confidence to survive an attack (HSI, 2009). While Israel has not been a victim of a chemical or biological attack to test the effectiveness of this program, the kits do offer a sense of psychological and physical resiliency within its populace (HSI, 2009). Since 1992, the Israeli government has required newly constructed homes, apartment buildings, and public buildings to have a protective room that is "bomb-resistant and capable of being sealed airtight" (Tucker, 2003, p. 9). Airtight would include using plastic sheeting and duct tape to assist in sealing the room.

The United States has not issued nor required any personal preparedness kits for its citizens or emergency responders. In the United States, there is a sentiment the responsibility for citizens safety is abdicated to the government as their responsibility. While the United States has provided directions on how to create a preparedness kit and emergency plan only 57 percent report having supplies set aside for disasters and only 44 percent report having a household emergency plan (FEMA, 2009). The United States has made available chemical, biological, and other preparedness programs; however, there have not been any major drills or exercises that involve a realistic sample of the emergency responders who assist in the deployment of these resources *in combination with* their families.

Nationwide drills called Turning Point have been conducted in Israel since the summer of 2007 (HSI, 2009). The latest drill, Turning Point 5, was conducted in June, 2011. Turning Point 5 tested SMS (Short Message Service) technology using text messages, which were used in conjunction with regular emergency alarms. Additionally, this drill gave the public an opportunity to practice using public bomb shelters and personal fortified rooms (Greenberg, 2011). Major General Yair Golan, Head of the Home Front Command and Minister of Home Front Defense Matan Vilnai, stated, “Civilians who understand can better deal with emergencies” (Greenberg, 2011, concluding paragraph).

Contrary to this approach is the United States version of Turning Point, called the National Level Exercise 2011 (NLE 11); however, the NLE 11 goal was to test the objectives of federal, state, and local government (employees) and did not include their family members. A critical element of response to and recovery from disasters is the emergency responder families and they should be included in these types of exercises. While community preparedness is an important component of national preparedness, emergency responders and their families are beset with different challenges in a disaster and thus “need more than to simply avoid becoming victims and maintaining basic necessities; they must be able to report for assignment in dire conditions” (Landahl & Cox, 2009) while fully knowing their families are okay.

The emergency response organizations that have communications plans and responder/responder-family support programs in place are those that have learned of the importance of such programs from past experiences (Sturdivant, 2009). Israel has learned throughout the years how important responder and citizen preparedness is and has taken steps to increase its citizen’s preparedness and response capabilities. Integrating the families of emergency responders into emergency preparedness drills and exercises, as well as providing the supplies needed to sustain them during an all hazard event, will assist in the creation of a resilient emergency responder population.

When responders and their families are prepared for disasters, they have instituted a force multiplier in their resilience. As Stephen Flynn (2007) wrote, we should look at our resiliency (or preparedness) in a similar manner as we do going on a camping trip:

It would be foolhardy to leave the house without having undertaken some basic precautions: checking that the tent is in working order; putting together a first aid kit, including all necessary medications; making sure there are extra batteries for the flashlights; and letting friends and neighbors know the planned itinerary. But the real benefit of taking the time to prepare is the peace of mind that comes with knowing the challenges we may encounter on the trail will not ruin the entire trip. We end up worrying less and enjoying ourselves more (p. 9).

In addition to drills, Israel uses Web-based readiness training for citizen preparedness. Their training appears to exceed the United States on-line training showing how to be prepared for a disaster. The United States currently has four videos on preparedness on the *Ready.gov* Website with each less than five minutes in length. Israel's Web-based, preparedness training uses tutorials that offer step-by-step instructions, video clips, illustrations, and directions for multiple types of events from mortar fire to floods and fires (HSI, 2009). This Website "equips the public with the knowledge and training to be self-prepared and is a key tool for engaging the public in overall readiness" (HSI, 2009, p. 83).

On February 10, 2003, the Department of Homeland Security released a fact sheet on biological agent attacks (FEMA, 2003). This fact sheet reminded United States citizens to have plastic sheeting and duct tape in their preparedness kits to aid in sealing off an internal protective room in case of a biological attack. The information was met with mockery by the general public, late night talk show hosts, and media as a ridiculous request by the Department of Homeland Security. What skeptics were not aware of, or dismissed as ineffective, is that this technique was used as part of the expedient sheltering measure suggested by NATO in 1983 and determined as an appropriate measure to reduce infiltration (from a chemical plume) (Sorenson & Vogt, 2001). Had an appropriate on-line training program been put in place to educate the general public, this type of ridicule may have been avoided and a lifesaving measure appropriately used if needed.

In all its preparedness initiatives, Israel uses direct engagement with its citizens. There are three core reasons why this type of direct engagement with employees and family members of emergency responders is significant. First, family members

repeatedly practicing what they have to do during a disaster without their emergency responder spouse or significant other will minimize stress and anxiety. Furthermore, in a survey of federal and state emergency responders conducted by Brian Sturdivant of the Scottsdale, Arizona Fire Department, “100 percent of the respondents (FSR 1-10) expressed to some degree the idea that during any crisis, first responders rely heavily on their training to instinctively transition into ‘action and mitigation’ mode” (2009, p. 39). This is an important concept to understand to grasp fully the issue of responder personal preparedness and is a concept emergency response agencies have used in training for years. For example, law enforcement agencies repetitively train to establish muscle memory for when officers draw and fire their weapons and perform defensive tactics. To reduce the risk of traffic crashes, they are trained to scan the horizon from side to side when either routinely driving a vehicle or during a vehicle pursuit.

The second reason why direct engagement is significant is that by increasing family participation, there is an increase in dialogue between the agency and the families. This will allow interaction between family members and the agency that has not occurred in the past and will allow for input in planning realistic exercises. Additionally, this will provide family members a sense of ownership with the agency preparedness program.

Lastly, the involvement of family members of responders will allow them to understand the policies and procedures of the agency during disasters and what agency programs are available to support them during a disaster or when their responder is deployed to another area of the state or nation. This will also bolster confidence between the agency and the families which aids in establishing a resilient agency.

It appears the United States is watching and learning from Israel. On November 9, 2011 at 2:00 p.m. the first nationwide test of the Emergency Alert System (EAS) was conducted. Similar to Turning Point communication drills, the nationwide EAS test ensured the President of United States could activate the system and provide information if needed for a national emergency.

C. THE PSYCHOLOGY OF PREPAREDNESS

After the horrific events of 9/11, President Bush created an executive order making citizen preparedness a priority. The Department of Homeland Security created the Citizen Corps as a grassroots approach to increasing the nation's preparedness level. However, it is also critical that emergency responders are prepared to respond to catastrophic events, natural or manmade, at a personal and professional level. To assist in developing the emergency responder personal preparedness capability, behavior change models need to be reviewed and analyzed to determine the most effective ways to improve and advance emergency responder personal preparedness.

According to Jackson, "A major concern in any catastrophic event is to establish adequate governmental presence to reassure the public and maintain order" (Jackson, 2005, p. 10). With 61 percent of the people who participated in the 2009 Citizen Corps National Survey indicating "they expected to rely on emergency responders in the first 72 hours following a disaster" (FEMA, 2009, p. 22), the need for emergency responders to be prepared is even more significant. In his Naval Postgraduate School thesis, Brian Sturdivant states:

Often, in times of disaster, one of the difficult choices first responders must make is to either report for work and to protect the community and citizens they are sworn to serve, or to secure the well-being and safety of their families. (2009, p. 2)

An emergency responder's desire to check on his or her family prior to responding to a disaster may be indicative of a lack of confidence he or she has in his or her personal preparedness level. According to psychiatrist Dr. Cheryl Person:

A special problem is posed during natural disasters by the fact that emergency responders, whose primary duty is to assist others, also face personal challenges as a result of the disaster. How to cope on an emotional level, during and in the immediate and long-term aftermath of a disaster, becomes a central concern for police and other rescue workers." (as cited in Deflem & Sutphin, 2009, p. 46)

These "personal challenges" could cause stress, which, according to Paton and Violanti, "adversely affects performance in circumstances that demand high levels of

attention and creative solutions to emergent problems” (as cited in Bongar et al., 2007, p. 225). This risk of stress can be decreased if there is an increase in the relationship emergency responder organizations have with the responder’s families. The relationship could include implementing family friendly policies and support groups as well as allowing input from family members during the response and recovery planning process (pre-event) (Bongar et al., 2007).

There is an assumption in many disaster response plans that emergency responders will show up quickly during the response phase of disasters. However, according to Paton and Violanti (as cited in Bongar et al., 2007, p. 232), “A discrepancy between plan assumptions and actual behavior creates an additional source of uncertainty for protective services officers and further contributes to their stress risk.” Therefore, as Lasker noted (as cited in Bongar et al., 2007), the planning for disasters or other catastrophic events should be based on what emergency responders or “protective services officers” would actually do or their actual behaviors during the response phase.

By understanding behavior change models the motivational factors to increase the personal preparedness levels of emergency responders may be identified and programs to increase preparedness implemented. There is a vast amount of literature on behavior change models or theories. Nicholas Campasano conducted a review of some of these models, including the Citizen Corp personal behavior change model for disaster preparedness (PDP) introduced in the fall of 2006 (Opinion Research Corporation [ORC] Macro, 2006). Campasano recognized the importance that behavior change constructs have on improving personal preparedness rates and identified gaps and limitations of the PDP.

The PDP model is based on two theoretical models: 1) the extended parallel process model (EPPM) and 2) the stages of change/trans theoretical model. These are individual-based, psychosocial behavior models, and Campasano posits that personal preparedness activities should be directed more at a community level (2010). Some may define community in the context of living in a defined area or geographic location; however, it can also be a relational entity where shared values and norms bring people together (Campasano, 2010). For example, emergency responders as a whole or as

individual disciplines (including their family members) could be considered a community. Therefore, the community readiness theory is applicable to responder preparedness. This theory defines phases a community has to work through in order to reduce a problem. According to Jumper-Thurman, Edwards, Plested, and Oetting (as cited in Bernal, Trimble, Burlew, & Leong. 2003, p. 600), “when applied to a reasonably focused target audience and focused on a specific issue” the community readiness approach is logical to use as an intervention method. By adding a community level, additional influences present themselves which shape ones decisions or behaviors to help move through different phases. These influences could be rules, policies, and social norms as a few examples.

Different intervention strategy theories can be used at the community level to support behavior change. One in particular, the diffusion of innovations theory, has already been shown to be effective with law enforcement agencies. The theory “addresses how new ideas, products, and social practices spread within an organization, community, or society, or from one society to another” (National Cancer Institute, 2005, p. 23). For example, TASER International introduced an electronic control device (the Thomas A. Swift’s Electronic Rifle, commonly known as a TASER). A few law enforcement agencies began using them to help control combative subjects with mostly positive results from the law enforcement framework. Policies, procedures, and use of force continuums were created, tested, and modified throughout the years demonstrating effectiveness and determining appropriate use. A TASER has since become a standard piece of equipment in many American law enforcement agencies who have shared commonalities in its operation. This same concept, but as a social practice versus piece of equipment, could be used in order to increase emergency response disciplines personal preparedness levels in conjunction with other behavior change model components.

A community approach versus an individual approach to behavior change should be emphasized with emergency responders. No matter what theories are used to change behavior, those that “target the community level recognize the multi-layered influences that shape the individual behaviors” (Campasano, 2010, p. 62). Reviewing all the multiple behavior change models and intervention strategies is beyond the scope of this

research; however, the PDP model was “developed to help answer the question—why aren’t Americans better prepared for disasters?” (ORC Macro, 2006, p. 12). In addition, several questions in the 2009 Citizen Corp Survey were to test the PDP. Campasano noted several limitations to the extended parallel process model and the transtheoretical model as used in the PDP model. The most serious shortcoming Campasano (2010) noted was the “lack of recognition of the many community and social influences in shaping individual behavior” (p. 120).

In a presentation by Bourque and Mileti (2008), Public Response to Terrorism in America, they identified two information types that drive public action that could assist in shaping behavior: 1) information received and 2) information observed. Observed information or cues are actions one takes after witnessing someone else taking action—a social influence. For example, while at a training facility, a group of emergency responders who are not personally prepared witness other emergency responders creating personal preparedness kits in a classroom. This could also be considered a community influence in that the emergency responder community is working on a common problem or issue relevant to the emergency responder culture. If the one who witnesses the preparedness actions is a part of the emergency responder culture, then surely this problem or issue would be relevant to them and may cue them to take action or at a minimum contemplate taking action.

Due to the PDP’s limitations and gaps, Campasano recommends a new model which incorporates both the *community* or “systems” approach and an *individual* approach to preparedness behavior change. According to Campasano, “By integrating the community readiness model and the precaution adoption process model, a coordinated preparedness program can be developed that utilizes the *power of the community* [italics added] and its *inhabitants* [italics added] to create behavior change” (2010, p. 120).

Landahl and Cox (2009) conducted a survey of homeland security personnel at the local, state and federal level. Their results are indicative of the need for a behavior change to increase responder personal preparedness levels. Of the organizations represented, only 29.2 percent had written plans or policies supporting families of

responders during a disaster; only 29.1 percent provide training and education on family and employee preparedness; and 70.3 percent do not offer opportunities for responder family members or the responders to attend personal preparedness training or education (Landahl and Cox, 2009, p. 8). The focus of preparedness at the individual level is not effective for emergency responder's personal preparedness. The addition of the community component with the individual family focus may increase the personal preparedness levels thus leading to organizational resilience.

IV. RESEARCH METHODOLOGY AND DESIGN

The method used to determine why emergency responders are not prepared and factors that may influence increasing their preparedness level involved conducting research in the form of online surveys of emergency responders. The survey was designed around four topic areas: profile/demographics (location in the country, race, discipline, gender, etc.), stages of change (confidence in current preparedness level, reasons for not preparing, agreeability to incentives to increase preparedness levels, etc.), risk awareness/perception (likeliness of disasters in their area), and severity (perception of impact a disaster will have on them, their family, and community).

The purpose of the survey was to identify the emergency responder reasons why they have not personally prepared themselves and their immediate family members for a range of hazards, what barriers are preventing them from creating personal preparedness plans, and what incentives would help in fostering personal preparedness plans and preparedness kit development. The survey utilized checklists and rating scales to better quantify and simplify the results.

There was one group of survey participants, not identified or associated with personal identifying information, consisting of three disciplines of emergency responders: law enforcement, fire, and EMS. These three disciplines were chosen as they are “typical” emergency responders whose capabilities are key factors in the initial response to and stabilization of disaster scenes.

If enough data was obtained from each FEMA region, an analysis was to be completed to distinguish whether or not an increase in personal preparedness was associated with the number of Presidential Disaster Declarations where the responder lived. Year 2000 to 2010 FEMA Presidential Disaster Declaration information and U.S. Census Data county codes for the United States were used to gather the data.

A majority of the survey questions have been replicated from FEMA’s, *Personal Preparedness in America: Findings from the 2009 Citizen Corp National Survey August 2009* (FEMA, 2009) and the *Are We Ready? Introducing the Public Readiness Index: A*

Survey-Based Tool to Measure the Preparedness of Individuals, Families and Communities from the Council for Excellence in Government (2006). Additional questions, statements, or answers were added to the survey to make a question more relevant to the survey population. For example, type of discipline (fire, EMS, law enforcement), rank, personal involvement in a disaster, as well as agreement level with statements on preparedness incentives. These questions assisted in identifying reasons why emergency responders are not personally preparing themselves and their immediate family members.

Using the past survey questions from the general public allows preparedness comparison/correlation between emergency responders in this survey and the general public, which will assist in developing future policy recommendations and programs specific to emergency responders personal preparedness levels.

V. RESULTS AND ANALYSIS

This chapter presents the results of the survey and provides analysis of those results. The survey, *Emergency Responder Personal Preparedness*, was open to participants for 31 days (August 23, 2011 to September 24, 2011). Respondents were from 39 states and every FEMA region. Of the 1,247 respondents who visited the link and began the survey, 94.5 percent (n=1,179) completed it. This does not mean all respondents answered every question as they were allowed to skip any questions in the survey. Where relevant, the population of those who answered the survey question is given (e.g., n=total number of respondents).

A. QUESTION 1: SURVEY INTRODUCTION

This question explained the research study and was used to obtain respondents consent to participate in the survey. If consent was not obtained the participants were thanked and removed from the survey instrument. Of the 1,247 respondents, 99.4 percent consented to continue with the survey (n=1,240) and 0.6 percent (n=7) opted out of the survey.

B. QUESTIONS 2, 3, 4, AND 5: REGION/STATE/COUNTY DEMOGRAPHICS

1. Question 2: In What FEMA Region do You Live?

This question begins the collection of the respondent's demographics. The vast majority of respondents, 49.6 percent (n=610), were from Region V (Illinois, Indiana, Michigan, Minnesota, Ohio, and Wisconsin) due to a greater number of the researchers contacts for emergency response agencies being from that region and specifically the state of Michigan. The second and third largest survey populations were from Region VII (Iowa, Kansas, Missouri, and Nebraska), 18.2 percent (n=224), and Region IX (Arizona, California, Hawaii, and Nevada), 11 percent (n=135). The entire survey

respondent breakdown by region is shown in Figure 1. Regions V, VII, and IX were used to compare data by regions as they each had over 100 respondents.

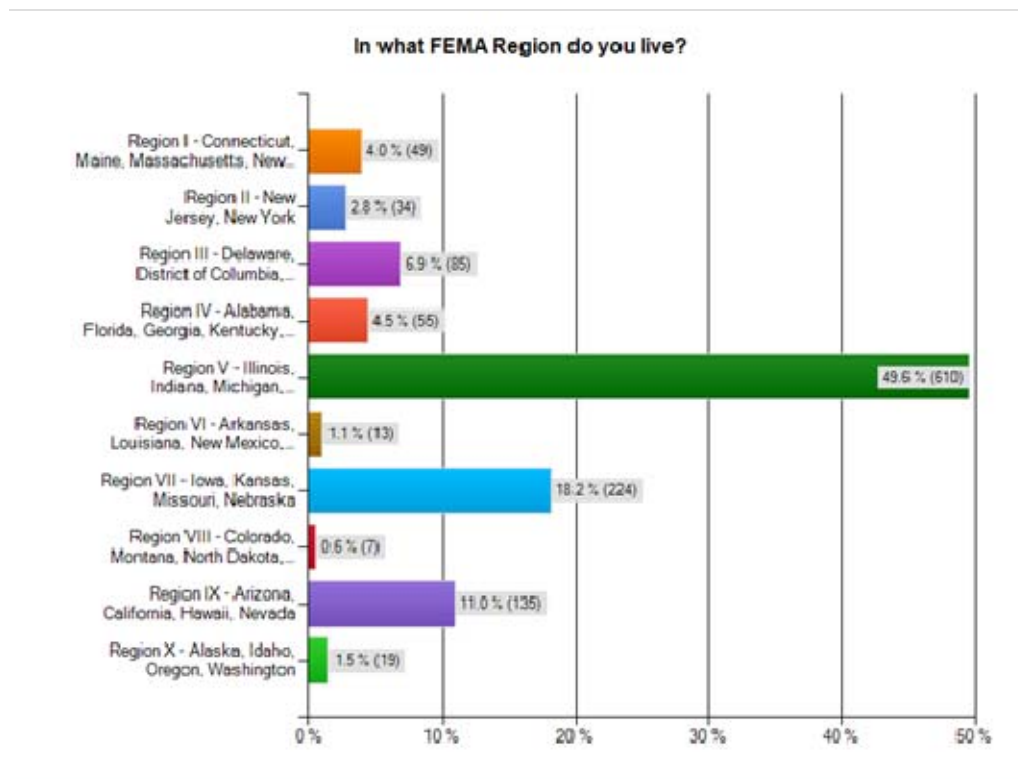


Figure 1. FEMA Region Respondents

2. Question 3: In What State do You Live?

This question provided respondents with selections of states specific to the FEMA region previously selected. Michigan had the highest number of respondents out of Region V at 82.3 percent (n=502); Missouri had the highest number of respondents out of Region VII with 77.2 percent (n=173), and California had the highest number of respondent out of Region IX at 82.2 percent, (n=111). See Figures 2, 3, and 4 for the entire breakdown of respondents for these three regions.

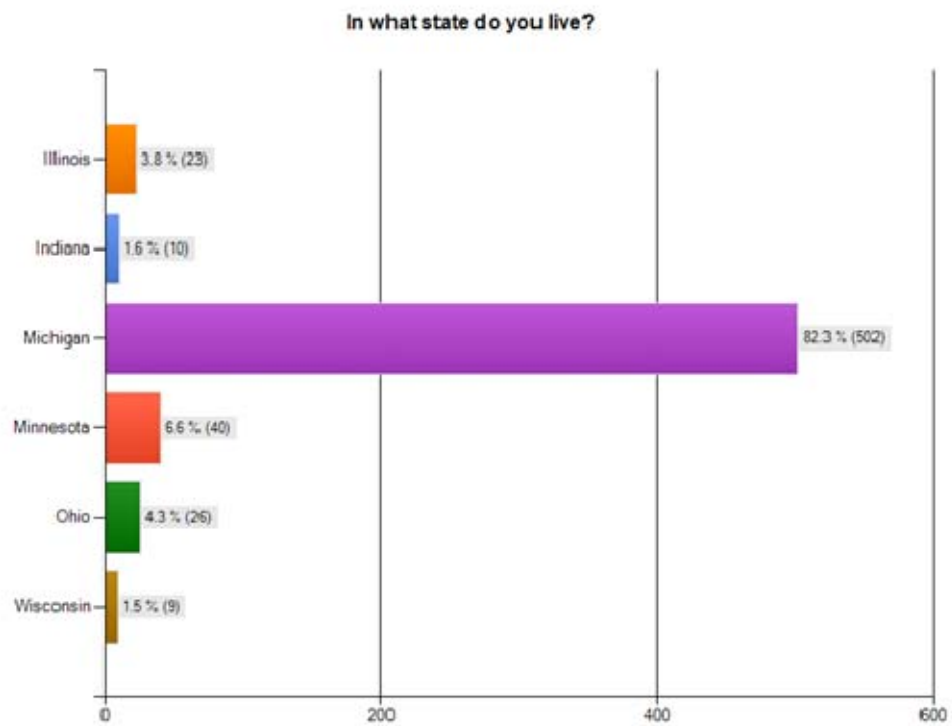


Figure 2. FEMA Region V States Respondents

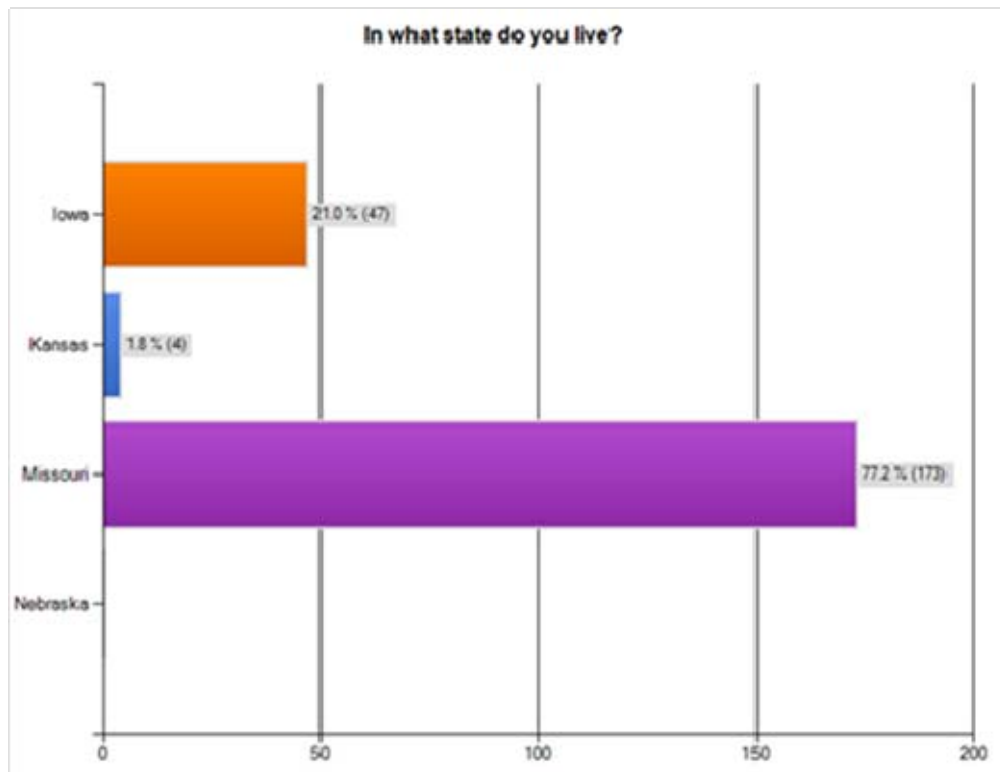


Figure 3. FEMA Region VII States Respondents

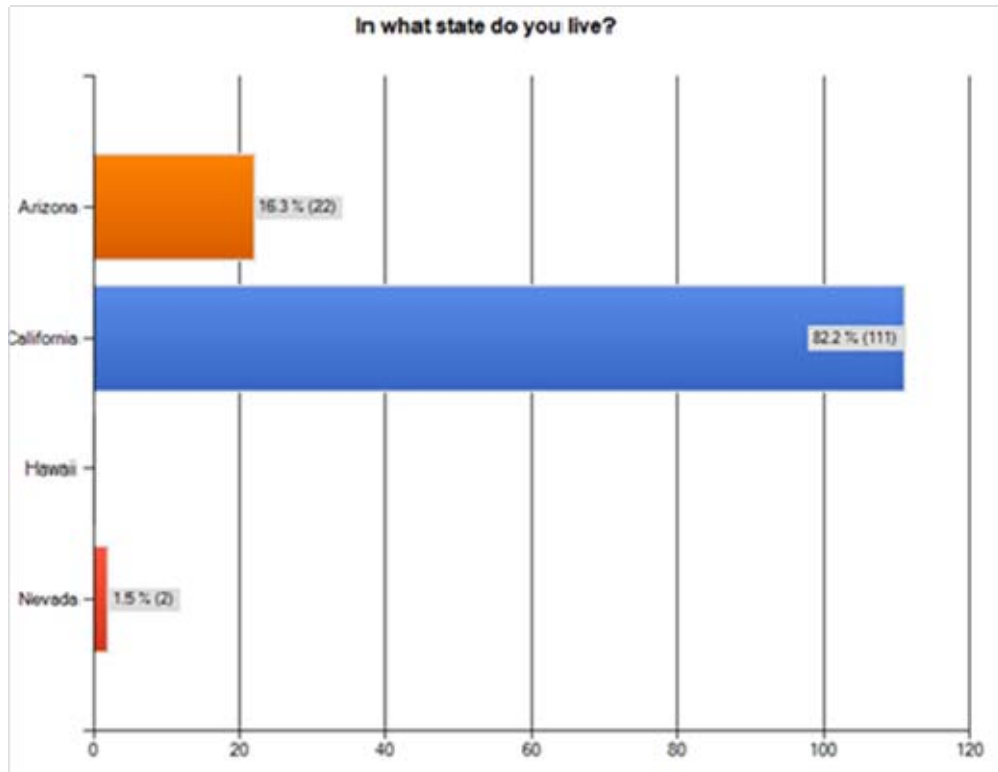


Figure 4. FEMA Region IX States Respondents

3. Question 4: In What County do You Live?

The respondents answer to the previous question, In what state do you live?, directed them to this follow up question. Not enough respondents were identified in counties where Presidential Disaster Declarations were declared; therefore, a comparison of those counties and the responders' level of personal preparedness could not be completed. This type of analysis should be considered for future research.

4. Question 5: I Live in an Area That is Considered...

The area where responders live (rural, urban or suburban) yielded similar data across the entire survey population. For example, when comparing the types of areas

where responders live to their level of preparedness (question number 15), the majority of respondents indicated they have been prepared for at least six months, which is consistent with the entire survey population (see Figure 5).

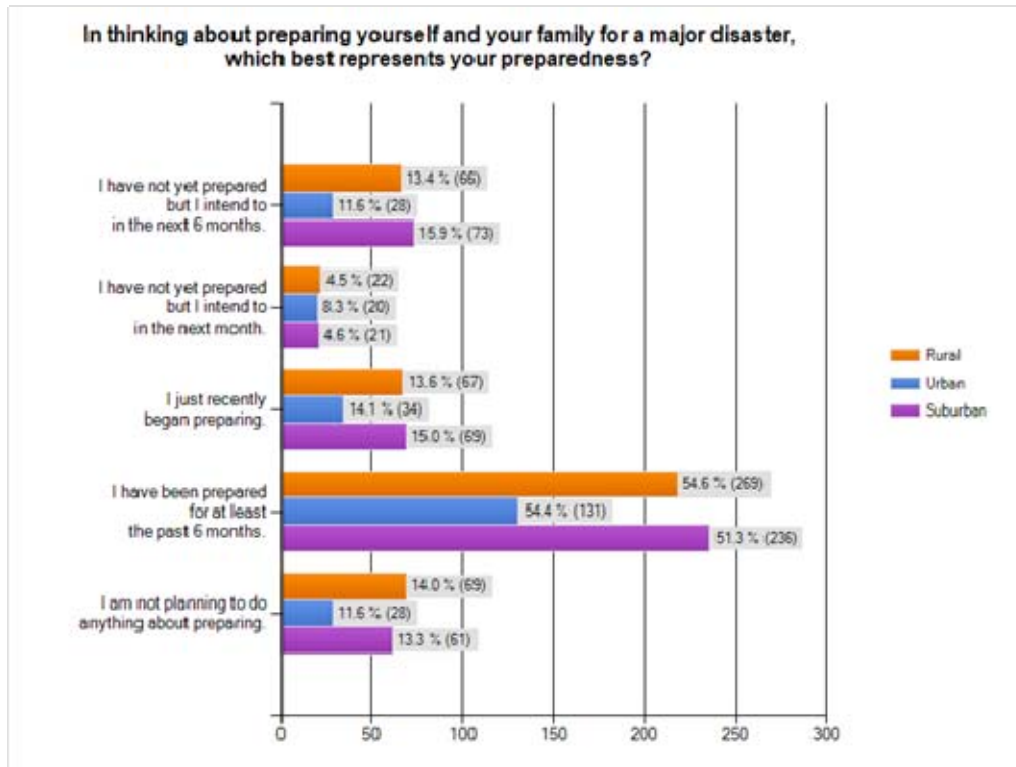


Figure 5. Preparedness Level By Residential Area Type

C. QUESTION 6: GENDER

The majority of the participants were male with a response rate of 81.8 percent (n=978). The female response rate was 18.2 percent (n=217). Fifty-two participants skipped this question.

D. QUESTIONS 7 AND 8: RESPONSE DISCIPLINE AND RANK

The respondents who completed the survey were comprised of a majority of law enforcement personnel (n=717) followed by fire (n=332) and EMS (n=256) as shown in Table 1. The discrepancy between the number of respondents by discipline (n=1305) and

the total number of respondents who finished the survey (n=1179) is due to some respondents selecting multiple disciplines and/or skipping the question. For example, someone who works for a Department of Public Safety (and is tasked with being a fire fighter and police officer) may have selected both fire and law enforcement as their discipline in the survey. The findings between disciplines were similar with no discipline indicating a significant difference in personal preparedness levels.

Table 1. Respondents by Discipline

Discipline	Front Line Employee	Shift Supervisor	Commander/Upper Management	Total
Law Enforcement	43.9% n=315	21.8% n=156	34.3% n=246	100% n=717
Fire	37.7% n=125	13.6% n=45	48.8% n=162	100.1% n=332
EMS	53.9% n=138	8.6% n=22	37.5% n=96	100% n=256
Total	n=578	n=223	n=504	n=1305

Data on the number of full-time, part-time, volunteer, paid on call, private, and public employees within the respondent disciplines is shown in Table 2. The number of respondents (n=1313) is also different than the total number of respondents who completed the survey for similar reasons as stated above. For example, someone may work in EMS full-time and be a paid on call fire fighter, thus indicating both selections in the survey.

Table 2. Respondents by Discipline and Work Status

Discipline	Full Time	Part Time	Volunteer	Paid on Call	Private	Public	Total
Law Enforcement	96.5% n=695	3.5% n=25					100% (n=720)

Discipline	Full Time	Part Time	Volunteer	Paid on Call	Private	Public	Total
Fire	59.6% n=198		17.5% n=58	22.9% n=76			100% (n=332)
EMS					27.2% n=71	72.8% n=190	100% (n=261)

E. QUESTION 9: RESIDENTIAL DEMOGRAPHICS

1. Question 9: In Your Current Residence, Do You Live...

- *With family members:* 87.3 percent (n=1,052)
- *With roommates (including boyfriend/girlfriend):* 4.3 percent (n=52)
- *With both family members and roommates:* 0.9 percent (n=11)
- *Alone:* 7.5 percent (n=90)

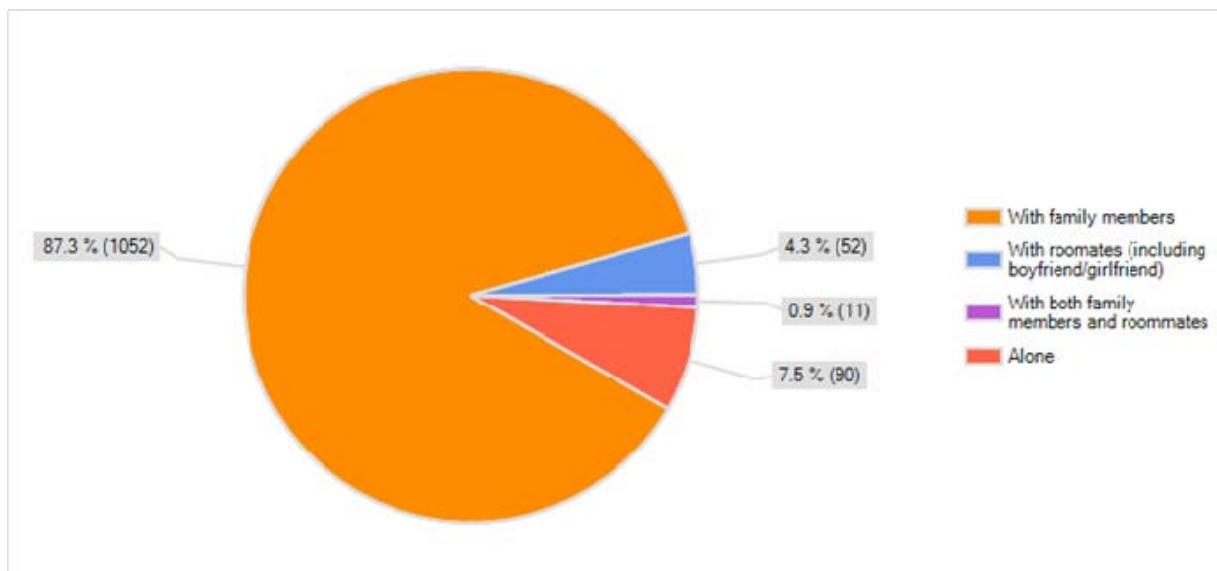


Figure 6. Residential Demographics

F. QUESTION 10

1. Question 10: Are There Children under the Age of 18 Living in Your Residence?

- *Yes*: 54.6 percent (n=655)
- *No*: 45.4 percent (n=545)

G. QUESTION 11

1. Question 11: Do you Currently Live with or Care for Someone with a Disability, Including Someone Elderly, Who Requires Assistance?

- *Yes*: 8.7 percent (n=104)
- *No*: 91.3 percent (n=1,097)

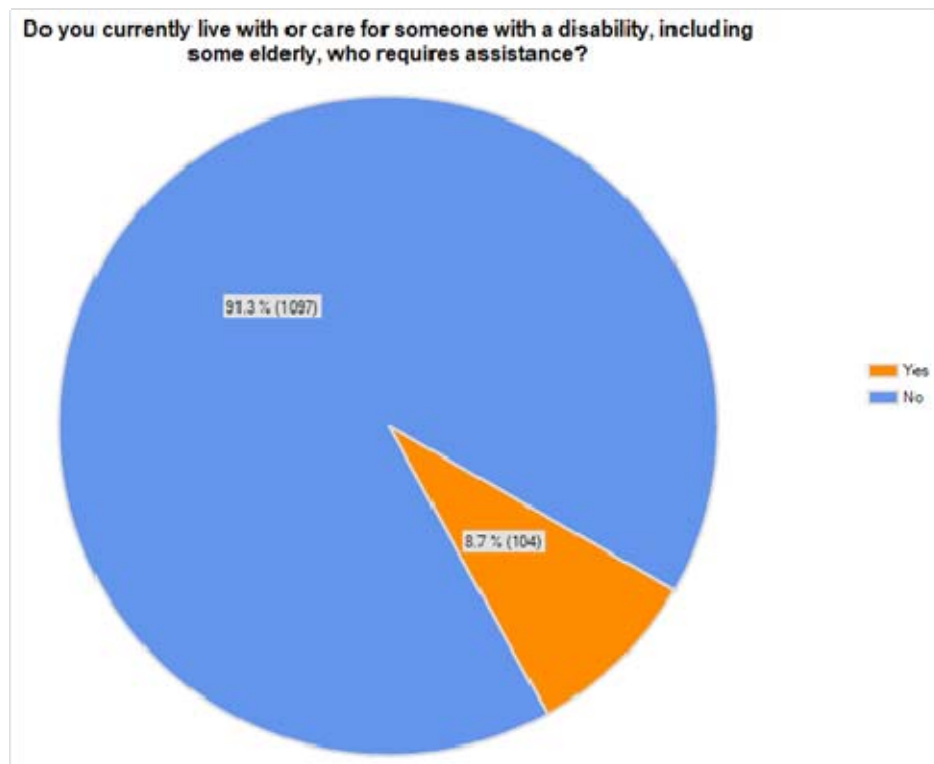


Figure 7. Special Needs

H. QUESTION 12

1. Question 12: Have You Ever Been in a Public Emergency Situation When You...

1. had to evacuate or assist with evacuating your own community?
2. lost electricity for three days, yet still needed to report to work?
3. could not get in touch with your family?
4. could not get to the store for three days?

The question was written to see how disaster situations may impact emergency responders. Of the situations presented, a higher percentage of all emergency responders (53.8 percent, n=645) reported that they had been in situations when they lost electricity for three days yet still needed to report to work versus the other situations presented to them (See Figure 8). Out of the 1,198 respondents to this question, 53 percent (n=645) indicated they still needed to report to work when electricity was lost for three days. This is a similar finding when compared to the general public. In 2006, when the general public was asked this question 52 percent indicated they had to go to work (Council for Excellence in Government, 2006, p. 16).

The majority of the respondents in this survey indicated they have not been in a position where they could not get to the store for three days, could not get in touch with family members, nor had to evacuate or assist with evacuating their community. With such high percentages of responders indicating they have not been in these types of emergency situations, agencies should be conscious of what David Ropeik, Harvard School of Public Health, calls “optimism bias,” which means “people generally believe bad things will happen only to the ‘other guy’ and ‘not me’” (as cited in Emergency Preparedness Institute, Inc., 2007, p. 8). If someone does not believe that they are susceptible to a threat or believes that there is a low likelihood the threat will occur, their motivation level to prepare for that threat will be weaker (ORC Macro, 2006). Not being in or conducting exercises for the types of situations as described above will promote the optimism bias.

There was a difference between FEMA Regions V, VII, and IX in the number of respondents who indicated they had lost electricity for three days, yet still needed to report to work. While Region V and VII both showed a higher percentage consistent with the overall finding, 61.8 percent (n=367) and 55.2 percent (n=122) respectively, Region IX only indicated 21.4 percent (n=28). This could be due to a number of reasons, such as a lower number of disasters causing power outages, restoration of power in a timelier manner, or a higher resiliency toward a power related vulnerability, but is beyond the scope of this research. Region X showed a higher percentage, 46.6 percent (n=62), of responders who had to evacuate or assist with evacuating their own community versus Regions V (27.1 percent, n=161) or VII (39 percent, n=85).

The majority of responders do not appear to have been in situations where they have had to evacuate or assist with evacuating their community, could not get in touch with their family, or could not get to a store for three days. To fracture the optimism bias exercises and drills should focus on these types of events in addition to events where electricity is lost for three days or more. Regardless of the causes, the data indicates that specific types of vulnerabilities and disasters should be taken into consideration when determining the framework of emergency responder preparedness initiatives in order to set the stage for appropriate preparedness, response, provision selection, and training programs.

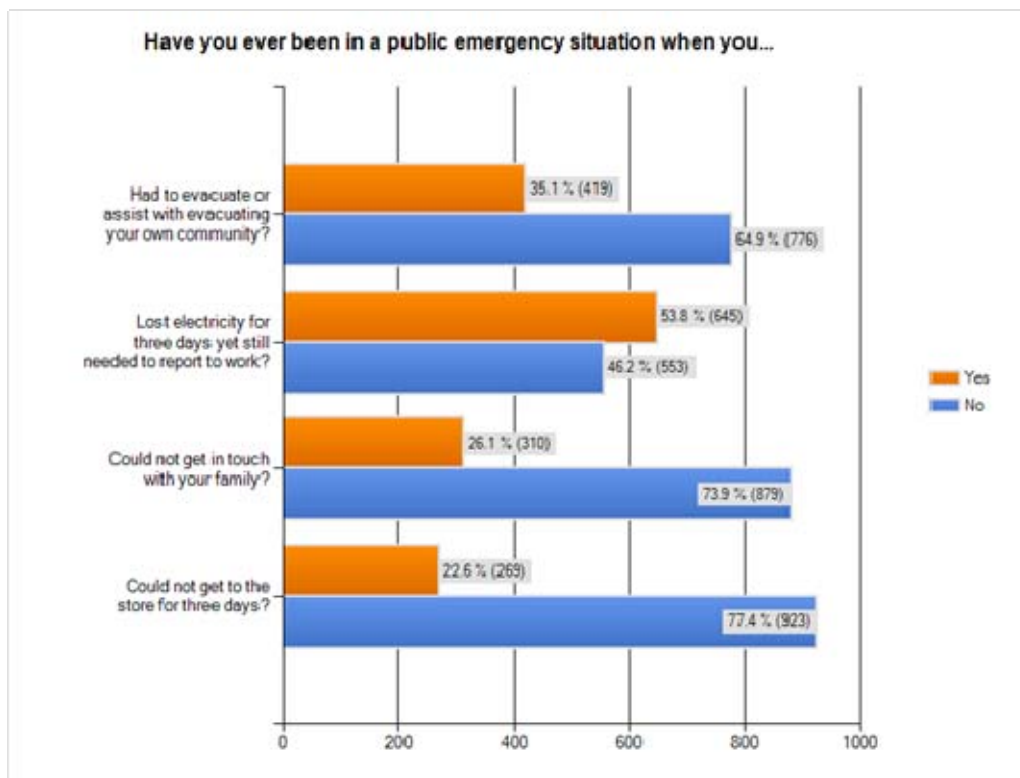


Figure 8. Emergency Situations

I. QUESTION 13: EMERGENCY PREPAREDNESS CONFIDENCE LEVEL

1. Question 13: How Confident are You about You and Your Family's Level of Emergency Preparedness?

As an indicator of overall preparedness, responders were asked to rate primary reasons why they are not personally prepared. Prior to answering any questions on preparedness, participants were provided with a definition of what “preparedness” or what “prepared” meant in the context of the survey. This definition explained:

...when we use the words ‘preparedness’ or ‘prepared,’ we are referring to individuals and their immediate family members having BOTH a preparedness kit to sustain themselves for at least 72 hours/3 days after an event (food, water - 1 gallon/person/day, first aid supplies, flashlight, radio/communications, etc.) AND a completed family emergency plan that

the family reviews annually which explains during a disaster how family members will contact one another, where to go if an evacuation is ordered, and what you will do in different emergency situations.

The definition was meant to ensure participants included the components of a family emergency plan and specific items in their preparedness kits to assist in validating future questions within the survey. The definition of preparedness is a critical concept. According to Gillespie and Streeter, “Only when we agree on what preparedness is will it be possible to study systematically its causes and consequences, and to design experiments that assess cost and benefits associated with preparedness” (1987, p. 156).

As shown in Figure 9, the majority of respondents, 40.8 percent (n=490), indicated they are somewhat confident about their personal level of emergency preparedness, and 39.7 percent (n=476) indicated they were confident in their own and their families level of emergency preparedness. Only 10.4 percent (n=125) indicated they were very confident in their personal preparedness level. The rating average of 2.51 out of 4.00 places the average confidence level halfway between responders being somewhat confident and confident on the scale provided. The confidence level becomes more relevant when question 15, current personal preparedness level, is compared to this data. According to the findings from the FEMA 2009 Citizen Corp National Survey (p. 18), “Past research has found that often, participants perceive themselves to be more prepared than their reported actions would indicate.”

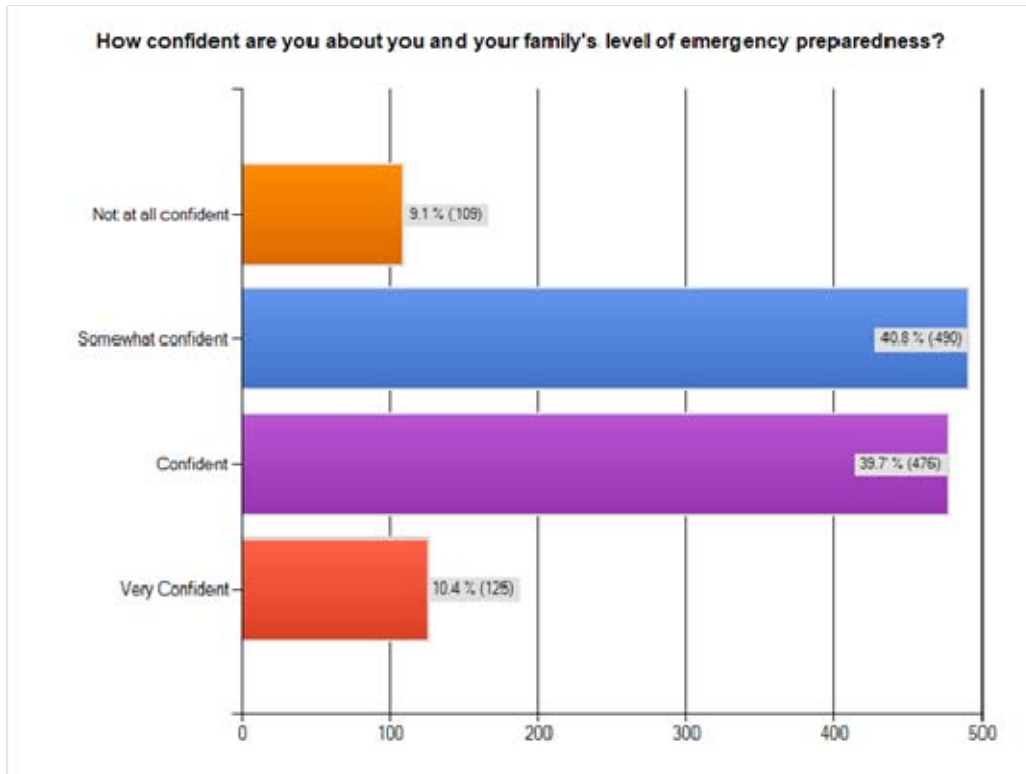


Figure 9. Confidence Levels in Family Emergency Preparedness

J. QUESTION 14: CONFIDENCE IN ABILITY TO PREPARE

1. Question 14: How Confident are You about Your own Ability to Prepare for Disaster?

The average rating for this question was 3.10 (n=1201) out of 4.00, which suggests the emergency responders are confident in their own ability to prepared for a disaster. The majority of respondents indicated they were confident, 46.5 percent (n=558), or very confident 32.2 percent (n=387), in their preparedness abilities (see Figure 10). Programs such as *Ready.gov* and specifically the *Ready Responder* program may have contributed to this high confidence level by using social marketing and creating tools to assist with personal preparedness. The *Ready Responder* program was launched in September 2010 by FEMA and CHDS alumna Alicia Welch. As this fairly new program evolves, confidence levels may increase.

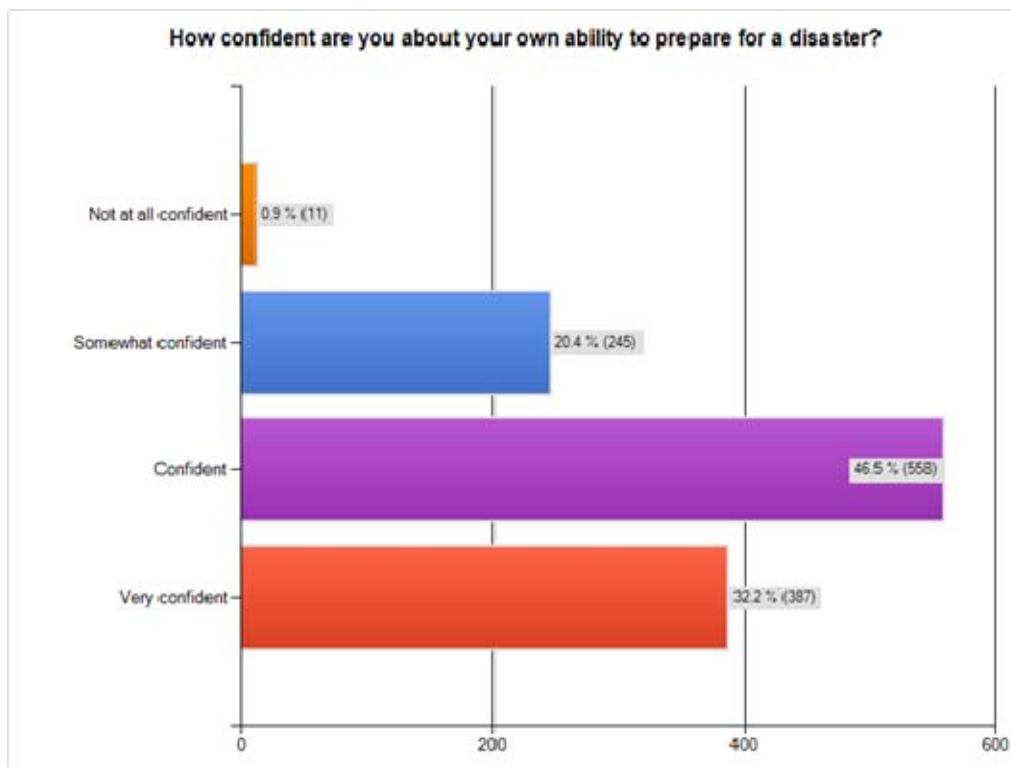


Figure 10. Confidence Level in Ability to Prepare

K. QUESTION 15: PERSONAL PREPAREDNESS LEVEL

1. In Thinking about Preparing Yourself and Your Family for a Major Disaster, Which Best Represents Your Preparedness?

Of the respondents, 53.2 percent (636) of the emergency responders indicated they have been prepared for a major disaster for at least the past six months (see Figure 11). In 2009, when asked this same question as part of the FEMA Citizen Corps National Survey, only 35 percent of the United States population indicated the same answer (p. 33). This may indicate that emergency responders are more personally prepared for disasters; however, it could be hubris, a false sense of optimism, or that they are overestimating their preparedness level—perceived preparedness versus actual preparedness.

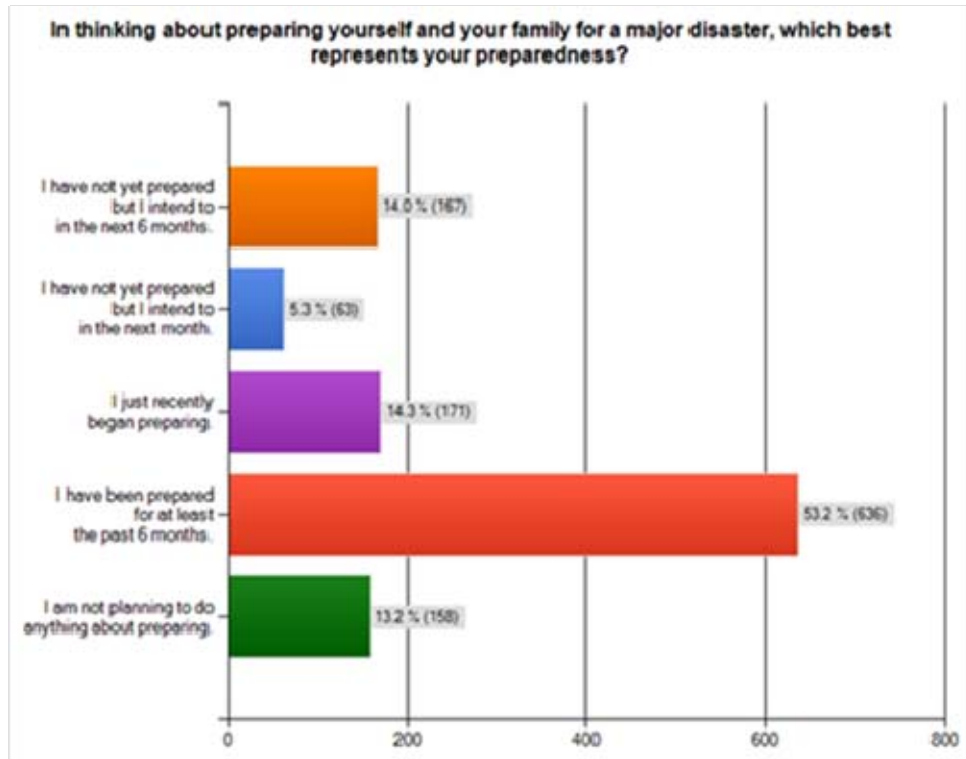


Figure 11. Responder Personal Preparedness Level

Table 3. Stages of Change Model (From FEMA, 2009)

STAGE	DESCRIPTION
Precontemplation	The individual is not intending to change or even thinking about change in the near future (usually measured as the next 6 months).
Contemplation	The individual is not prepared to take action at present, but is intending to take action within the next 6 months.
Preparation	The individual is actively considering changing his or her behavior in the immediate future (e.g., within the next month).
Action	The individual has actually made an overt behavior change in the recent past, but the changes are not well established (maintained for 6 months or less).
Maintenance	The individual has changed his or her behavior, maintained the change for more than 6 months, and is working to sustain the change.

While FEMA is promising that over half of the emergency responders are indicating they are “prepared” for major disasters, there are still just under half who are not prepared. Of the remaining responders, 14.3 percent (n=171), indicated they just recently

began preparing which translates into them being in an “action stage” (FEMA, 2009, p. 32). This is described as recently making overt changes in their preparedness behavior according to the stages of change model (see Table 3).

There were 14 percent (n=167) of the respondents who indicated they had not prepared but intended to within the next six months. These responders are considered to be in the “contemplation stage” since they are not taking action to change their preparedness behavior at the time but are planning to do so within the next six months (FEMA, 2009). Furthermore, 5.3 percent (n=63) of the respondents had not prepared but within the month were intending to prepare. This has been identified as someone being in the “preparation stage” (FEMA, 2009, p. 32), which is indicative of someone who is actively considering changing his or her behavior and, with an appropriate nudge, could be moved up into the action stage. The final group of responders would be categorized as being in a “precontemplation stage” according to the stages of change model (FEMA, 2009, p. 32). This 13.2 percent (n=158) of the survey population indicated they are not planning to do anything or about or even thinking about disaster preparedness planning and is, therefore, more appropriately called a dormant stage. Their preparedness level is inactive, and, until they reach the point of thinking about preparing or intending to do so within a short time frame, they stay at this stage until some type of incentive is introduced to increase their preparedness level.

An assumption prior to this research was that emergency responders would have a decreased or equal level of personal preparedness as the general population. However, it has been discovered in other preparedness surveys of the general population that respondents may overestimate their actual level of preparedness (actual preparedness versus perceived preparedness). The respondents in this survey may have overestimated their preparedness level even though a definition of personal preparedness was provided within the survey.

For example, 57 percent of the general population from the FEMA 2009 Citizen Corps National Survey stated they had emergency supplies set aside in their homes specifically for disasters. When asked to identify those items, a majority had food (74 percent) and water (71 percent) but lacked other crucial supplies such as a “flashlight

(42%), first aid kit (39%) or portable radio (20%)” (FEMA, 2009, p. 7). Respondents in the Emergency Responder Personal Preparedness Survey were not asked to identify specific items to validate their level of preparedness. This should be done in future surveys if repeated to identify detailed shortfalls within the emergency responder community.

When comparing the responders’ preparedness level to their confidence level from question 13, *How confident are you about you and your family’s level of emergency preparedness?*, 18.7 percent (n=119) are very confident, 57 percent (n=362) are confident, 23.5 percent (149) are somewhat confident, and .8 percent (n=5) are not at all confident. This may suggest that respondents were overestimating their preparedness level. The data could imply that more individuals who have been prepared for at least six months, according to the definition provided in the survey, would have higher confidence levels in their personal preparedness. They would have the needed critical supplies for disasters, a plan outlining what to do during evacuations, how to contact family members and be contacted by family members during disasters, and reviewing annually what to do during multiple types of emergencies.

The confidence rating average of 2.94 out of 4.00 (see Figure 12) places those who indicated they were prepared for at least six months just under the confident level (rating of 3) and at the upper end of the somewhat confident level (rating of 2). Those who selected they had not prepared but intended to within six months, had not prepared but intended to within the next month, or were not planning on doing anything about preparing were all near the somewhat confident level of personal preparedness with average ratings of 1.81, 2.03, and 2.04 respectively.

When comparing confidence levels between FEMA Regions V, VII, and IX, the results were similar with a majority of the respondents in each (41.2 percent, n=246; 42.5 percent, n=94; and 40.6 percent, n=54 respectively) indicating they were somewhat confident with confident being the next highest ratings.

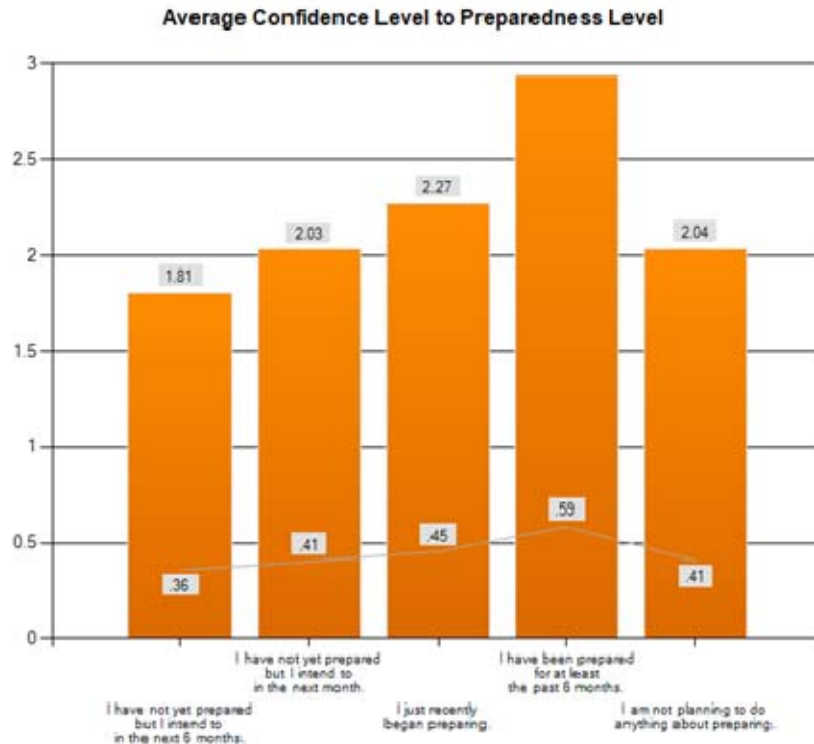


Figure 12. Confident Level Rating Average

L. QUESTION 16: LACK OF PREPAREDNESS REASONS

- Question 16: For each of the Following Statements, Please Tell me Whether it is the 'Primary Reason,' 'Somewhat of a Reason,' or 'Not a Reason' Why You Have not Taken any Disaster Preparedness Steps**

The selections provided were as follows:

- I have not thought about it
- I do not think an emergency will happen to me and my family
- Nothing that I do would be effective or make a difference
- I do not know what to do
- I do not know how to prepare a personal emergency preparedness kit and plan
- I do not want to think about it

- It costs too much money
- It is not required by my agency

This question generated a number of comments in the comment field provided. With the majority of the responders previously selecting they had been prepared for at least six months, they did not feel the question asked applied to them. Accordingly, the vast majority of participants selected *not a reason* for the statements (see Figure 13). This was consistent among all FEMA regions among survey participants. That being the case, the focus of the analysis was shifted toward those who *responded somewhat of a reason* and *primary reason*, which still contained a large sample of participants. Of those who provided a response (n=1035), 20.6 percent (n=213) indicated they have not thought about disaster preparedness steps as well as it costs too much money to take disaster preparedness steps as *somewhat of a reason* they have not taken any disaster preparedness steps. These two statements also rated the highest as the *primary reason* for not taking any disaster preparedness steps. Not thinking about disaster preparedness was a *primary reason* for 8.5 percent (n=88) of the respondents and costing too much money was a reason for 4.2 percent (n=43) of the respondents. The third highest rated statement was “I do not think an emergency will happen to me and my family.” The result of this statement was that 19 percent (n=196) of the respondents felt it was *somewhat of a reason* why they had not taken any steps and an additional three percent (n=31) felt it was a *primary reason*.

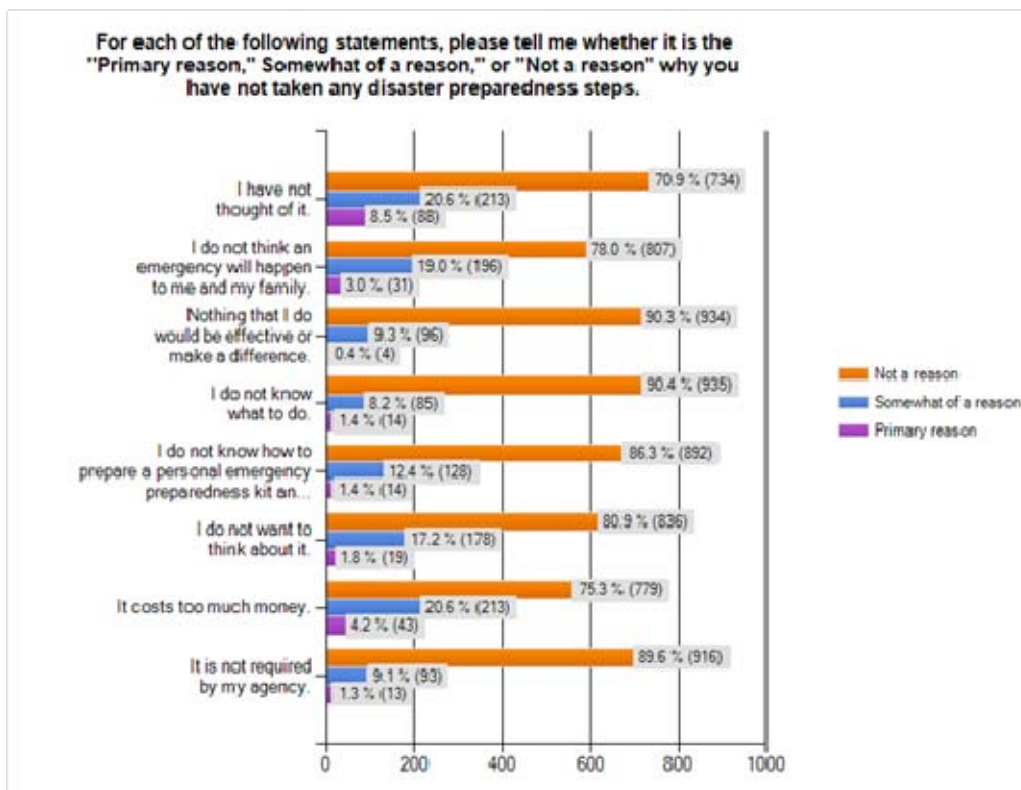


Figure 13. Reasons for Not Preparing

The responses to this question suggest there are three reasons why responders do not take personal preparedness steps: (1) they have not thought about it; (2) it costs too much money; and (3) they do not think an emergency will happen to them or their family. An additional reason with 17.2 percent (n=178) of the population is that they do not want to think about it.

M. QUESTIONS 17, 18, 19, AND 20: AGENCY PLANS AND PROTOCOLS

1. Question 17: My Agency Has a Disaster Preparedness Plan and Protocols

The majority of respondents agreed to some extent that their agencies had disaster preparedness plans and protocols (rating average of 4.67 out of 5.00, n=1,188). Of the respondents, 40.3 percent (n=479) agreed with the statement followed by 26.7 percent

(n=317) strongly agreeing, and 18.9 percent (n=224) somewhat agreeing (see Figure 14). These ratings were similar within each respective emergency response discipline.

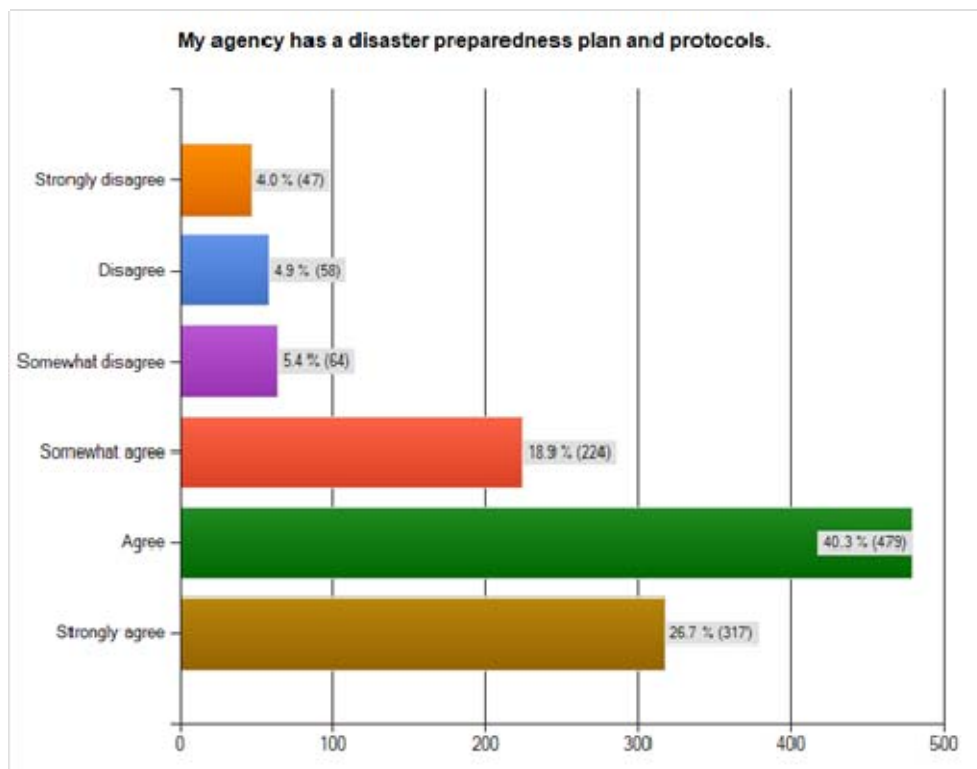


Figure 14. Agency Disaster Plans and Protocols

2. Question 18: I am Familiar with my Agency's Disaster Preparedness Plan and Protocols

When comparing having plans and protocols against being familiar with them there is a slight decrease in the agreeability rating average (rating average of 4.43, n=1,179). The strongly agree selection decreases to 21.4 percent (n=252), the agree selection decreases to 35.8 percent (n=422), and the somewhat agree selection increases to 24.3 percent (n=287) (see Figure 15). The number of respondents who are familiar with their agency's disaster preparedness plans and protocols has a fairly consistent agreeability rating. The slight decrease could suggest that outreach should be done in conjunction with annual training so that responders are more familiar with the roles and

responsibilities they have during a disaster as well as what roles and responsibilities supervisors and commanders have to ensure their employees are safe and effective during all phases of a disaster.

Defining what “being familiar with” the agency preparedness plans and protocols should be further evaluated in future research. Is being familiar just knowing the plan or protocol is written or would it be better to ask if they are exercised?

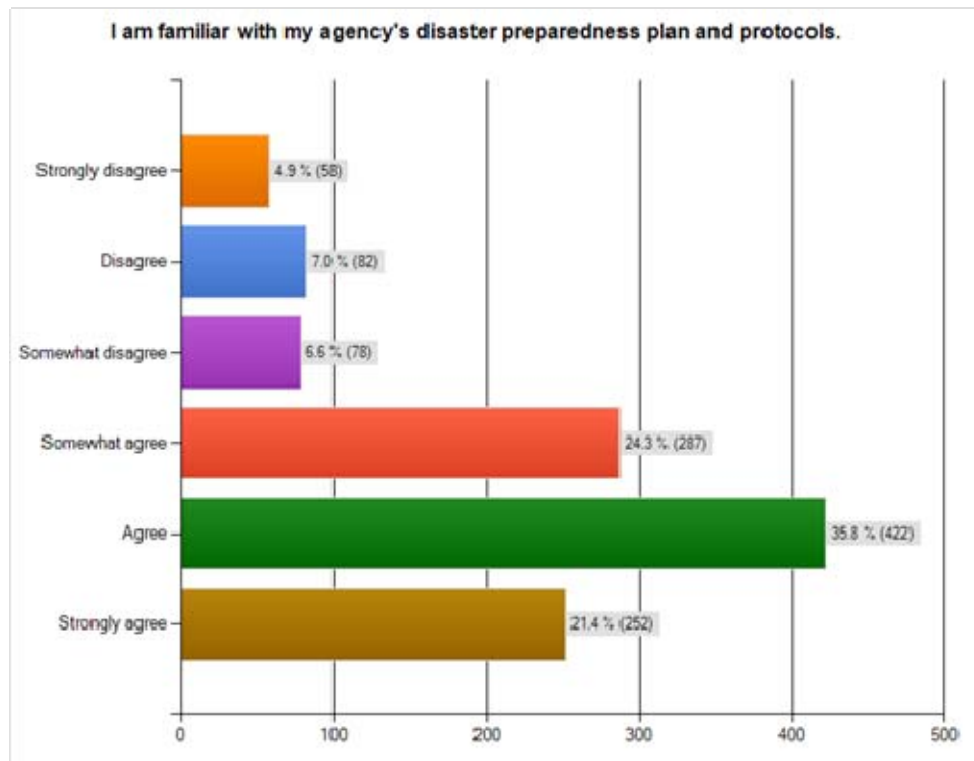


Figure 15. Familiarization with Agency Disaster Plans and Protocols

3. Question 19: My Agency Has a Policy that Requires Me to Have a Personal Preparedness Kit and Emergency Plan at My Home

Even though the survey suggests emergency response agencies have disaster response plans and protocols in place the number of those who require responders to have a personal preparedness kit and emergency plan at their home appears to be minimal with a rating average of 1.90 (n=1,172). The data indicates that 42.5 percent (n=498) and 40.8

percent (n=478) *strongly disagree* or *disagree* respectively with the statement provided (see Figure 16). Additionally, a previous survey, conducted in 2009 of homeland security professionals who graduated from the Naval Postgraduate School's Center for Homeland Defense and Security (CHDS) master's degree program, indicated that only "29% of the respondents reported their organizations had written plans to support the families of responders" (Landahl & Cox, 2009, p. 10) during disasters.

Emergency responders have indicated their agencies do not have a policy that requires them to be personally prepared with a preparedness kit and written plan for their family. The previous mentioned CHDS survey conducted by Landahl and Cox (2009) indicated that 29 percent of the organizations do not have plans to support their employees families during disasters; therefore, how can emergency response agency commanders be assured their responders are able and willing to report for duty during a disaster to help others if they do not require personal preparedness that would ensure the responders families are safe during a disaster?

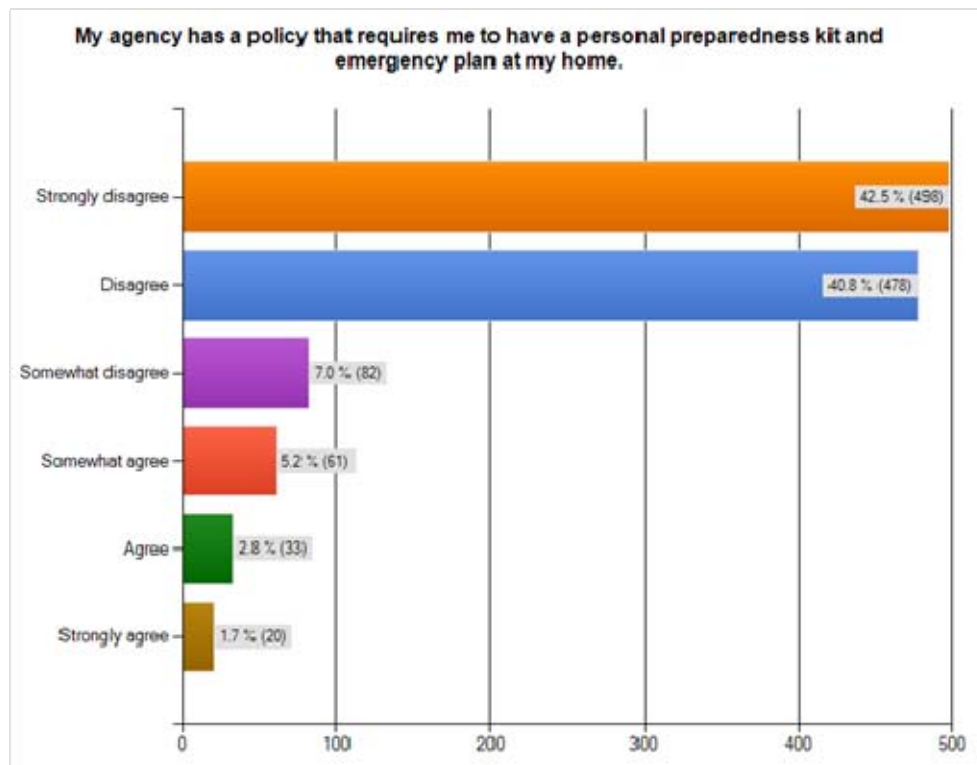


Figure 16. Personal Preparedness Requirements

4. Question 20: If My Agency Required it by Policy I Would be More Likely to Create and Maintain a Personal Preparedness Kit and Emergency Plan at My Home and for My Family

This statement generated a rating average of 4.17 (n=1,174), which is just above the *somewhat agree* rating; however, a majority of the respondents, 33.3 percent (n=391) *agree* with the statement and 23.9 percent (n=280) *somewhat agreed*, and 16.3 percent (n=191) *strongly agreed* (see Figure 17). Therefore, the inference is that IF agencies put a personal preparedness policy in place that requires the creation and maintenance of a personal preparedness kit and emergency plan at their home and for their family, then the responders are more likely to increase their personal preparedness.

According to Bertram, Landahl, and Williams, “leaders should develop clear expectations through policy and planning: including a Mission Statement and Strategic Plan” (2011, p. 35) in order to increase the chances of law enforcement officers to report for a critical situation. While the context of the statement was for law enforcement, this applies to any emergency response organization. Creating policy that is clear provides responders with the expectations of the agency and public before a disaster occurs and fosters agency resilience (Bertram, Landahl, & Williams, 2011). These policies should include:

1. emergency recall guidelines
2. hold-over guidelines
3. schedule assignments
4. levels of mobilization
5. civilian support staff
6. logistical support
7. family support
8. anticipated emergencies
9. policy enforcement/discipline guidelines
10. training and exercises (Bertram et al., 2011, p. 35)

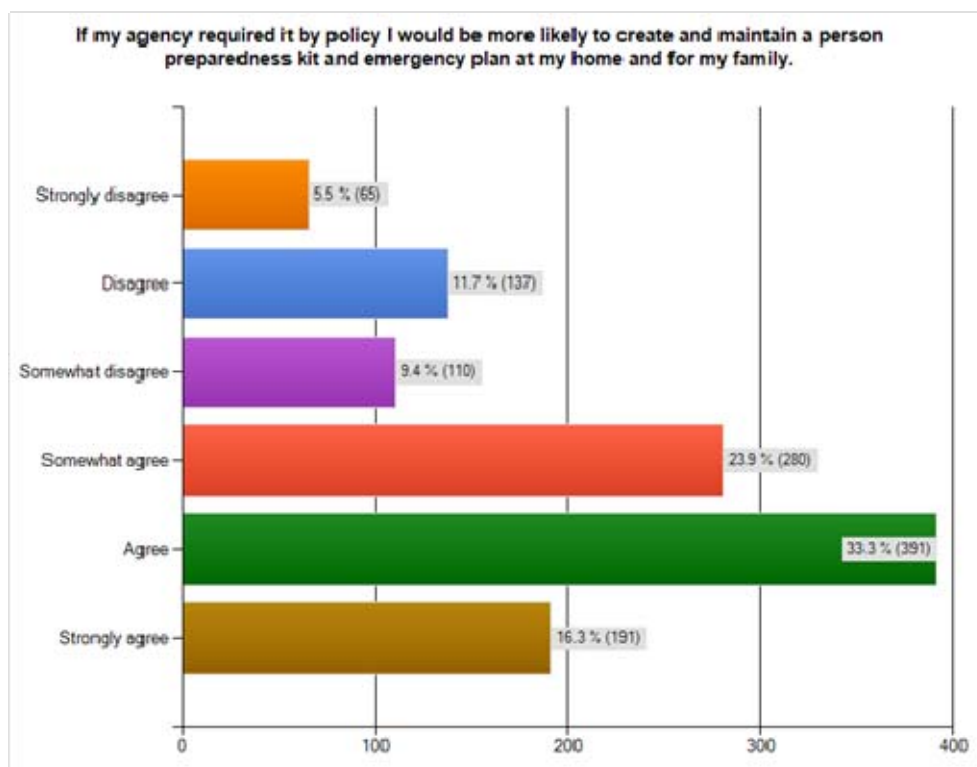


Figure 17. Policy Requirement Effects

N. QUESTIONS 21 AND 22: PERSONAL PREPAREDNESS TRAINING

1. Question 21: My agency Conducts Annual Training Specific to Personal Preparedness for Emergencies

Annual training conducted specific to personal preparedness returned a rating average of 2.78 (n=1,175) or just below somewhat disagree. There were 30.8 percent (n=362) of the respondents who disagreed with this statement followed by 25 percent (n=294), who strongly disagreed with the statement (see Figure 18). Pre-September 11, 2001, under the Nunn-Lugar-Domenici domestic preparedness programs, emergency response agencies received terrorism awareness training. After September 11, 2001, additional training in chemical, biological, radiological, nuclear, and explosives (CBRNE) training has been provided to emergency responders. Some of these agencies

have required annual updates or refresher training; however, the data suggests that personal preparedness training within emergency response agencies may be lacking or nonexistent.

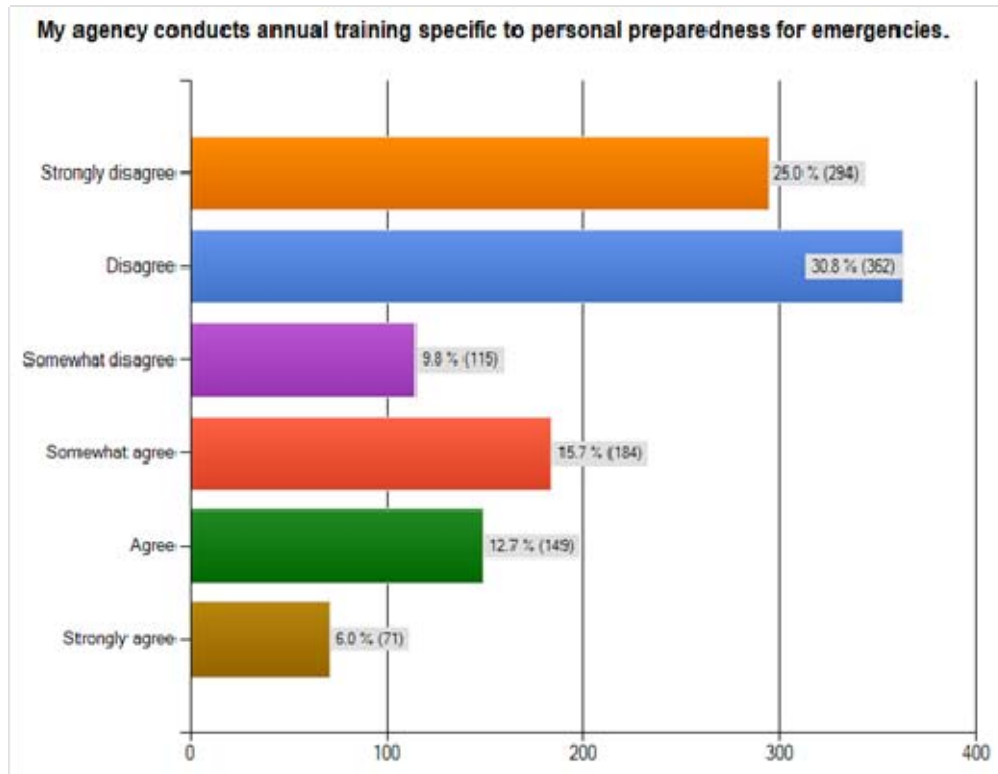


Figure 18. Personal Preparedness Annual Training

2. Question 22: If my Agency Included Personal Preparedness and Emergency Planning into Annual Training, I Would Prepare a Personal Preparedness Kit and Emergency Plan at My Home and For My Family

This follow-up to question number 21 returned a rating average of 4.34 (n=1,169) or just below halfway between *somewhat agree* and *agree*. Of the respondents 36.4 percent (n=426) *agreed* with this statement, and 32.9 percent (n=385) *somewhat agreed* (see Figure 19). This suggests that if agencies did have annual personal preparedness training, emergency responders would be more likely to prepare a personal preparedness

kit and emergency plan for their home and family. In comparing FEMA Regions V, VII, and IX, a higher percentage of respondents in Region V indicated they *somewhat agree* (35.2 percent, n=205) with the statement.

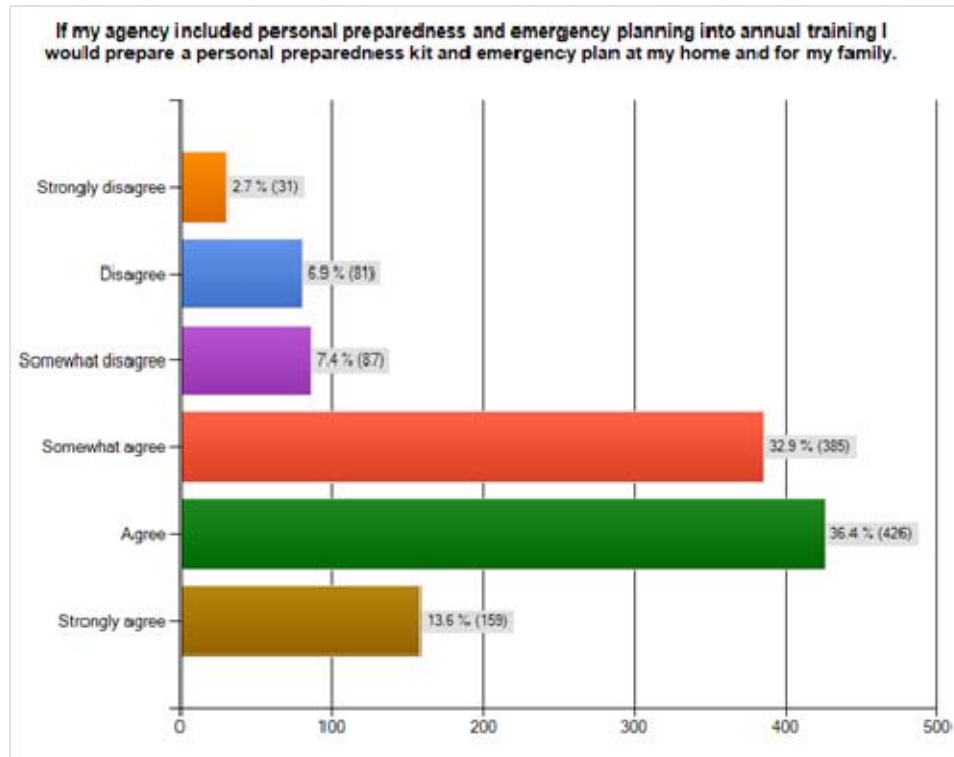


Figure 19. Personal Preparedness Training Requirement Effects

O. QUESTION 23: INCENTIVES: PERFORMANCE EVALUATIONS

1. Question 23: If My Agency Included as Part of My Performance Evaluations or Performance Management Plans to Have Personal Preparedness Kits at Home and Emergency Plans on File at My Home, I Would be More Likely to Create and Maintain Them

The rating average for this question is 4.17 (n=1,160). This places the respondents average rating slightly above the rating of *somewhat agree*. Overall, 32.7 percent (n=379) selected that they *agreed* with the question, 23.4 percent (n=271) *somewhat agreed*, and 18.2 percent (n=211) *strongly agreed*. Therefore, annual performance objectives for emergency responders requiring them to have and maintain a

personal preparedness kit as well as a written emergency plan for their family may increase their personal preparedness level. Performance objectives, similar to a policy or procedure, should have clear disaster response and preparedness expectations.

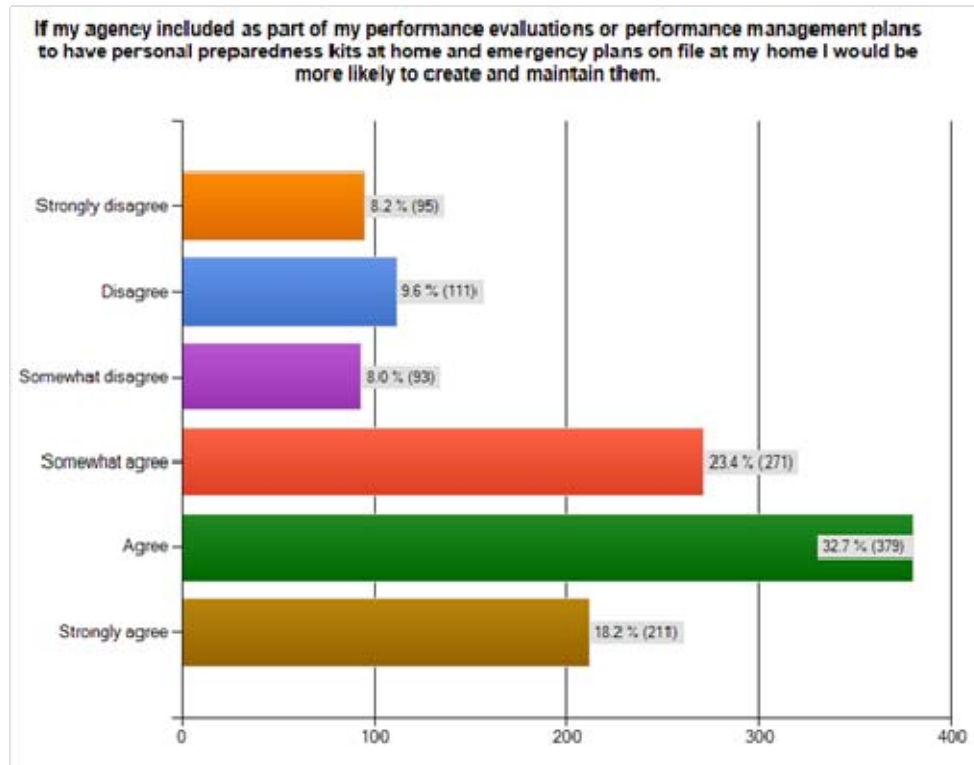


Figure 20. Performance Management Plan Effects

P. QUESTIONS 24, 25, AND 26: INCENTIVES: MONEY AND TIME

1. Question 24: If My Agency Paid for it, I Would Create and Maintain a Personal Preparedness Kit and Emergency Plan at My Home and for My Family

Of all the incentives from the survey, agencies paying for responders to create and maintain personal preparedness kits and plans had the highest rating average, 5.02 out of 6.00 (n=1,160). Respondents rated *strongly agree* (45.1 percent, n=523) as the highest, followed by *agree* (31.6 percent, n=367), and *somewhat agree* (12.8 percent, n=149) as shown in Figure 21. This finding was consistent among FEMA Regions V, VII, and IX.

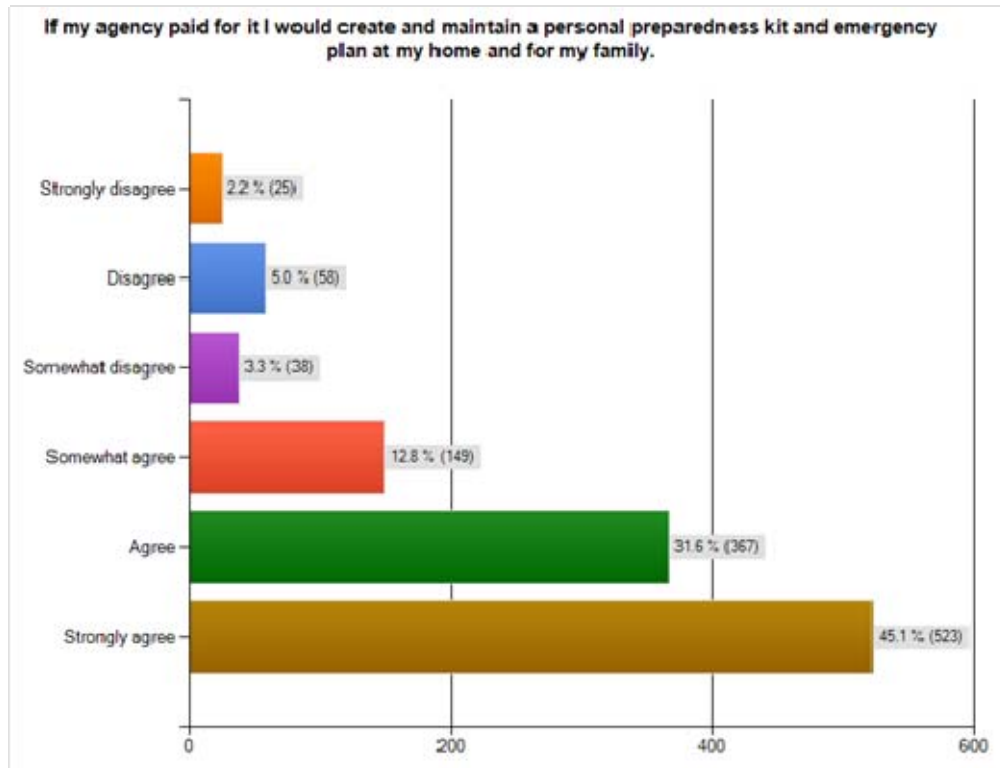


Figure 21. Incentive of Pay Effects

2. Question 25: If My Agency Allowed Me One Hour a Year on Duty Status to Create and Maintain a Personal Preparedness Kit and Emergency Plan at My Home and for My Family, I Would Do it

On duty time was another incentive the survey measured. One hour a year returned a rating average of 4.55 out of 6.00 (n=1,159), which places the average just above halfway between *somewhat agree* and *agree*. The selection with the highest rating from the respondents was *agree* with 33.7 percent (n=391), followed by *strongly agree* (26.8 percent, n=311), and *somewhat agree* (21.2 percent, n=246) (see Figure 22).

3. Question 26: If my Agency Allowed me Two Hours a Year on Duty Status to Create and Maintain a Personal Preparedness Kits and Emergency Plan at My Home and for My Family, I Would do it

This question was asked to determine if an additional hour would provide more incentive to create personal preparedness kits and plans. The rating average increased to

4.63 (n=1,152) and moved the largest percentage of respondents to *strongly agree* (31.7 percent, n=365) (see Figure 23). This trend was also consistent within FEMA Regions V and IX.

The incentives of pay, annual training, and duty time suggest that if these incentives were used as indicated, there may be an increase in the personal preparedness levels of emergency responders. Based on lessons learned from Hurricane Katrina, the New Orleans Police Department (NOPD) took this approach prior to Hurricane Gustav in 2008, as cited in Bertram et al. (2011). Officers were allowed paid time off to ensure their families were prepared and evacuated.

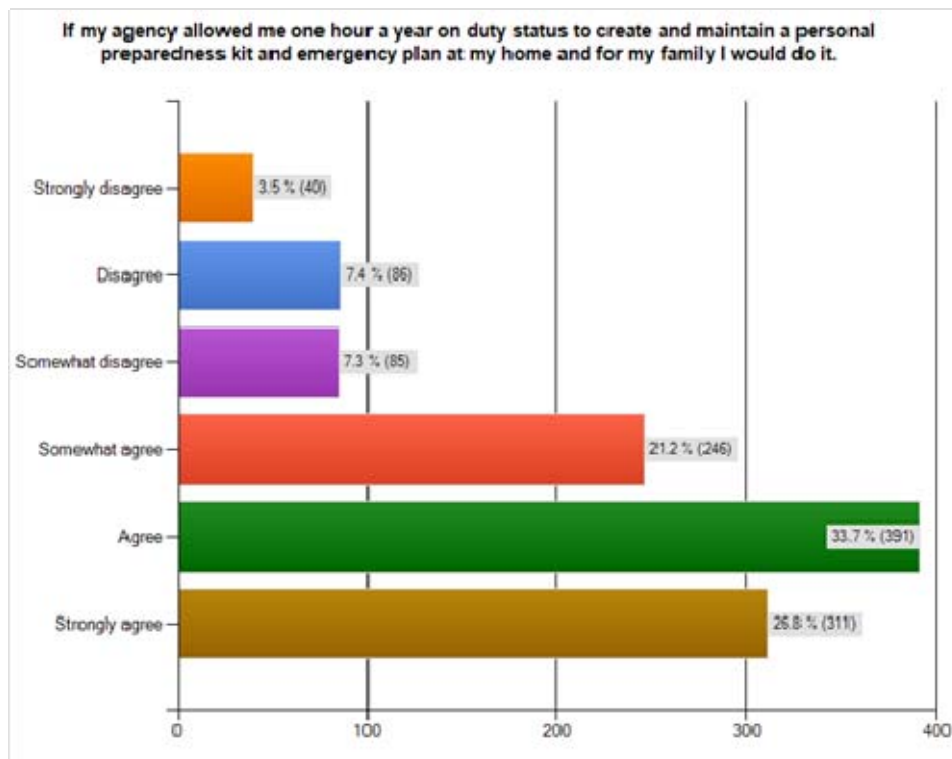


Figure 22. Incentive of One Hour of Duty Time

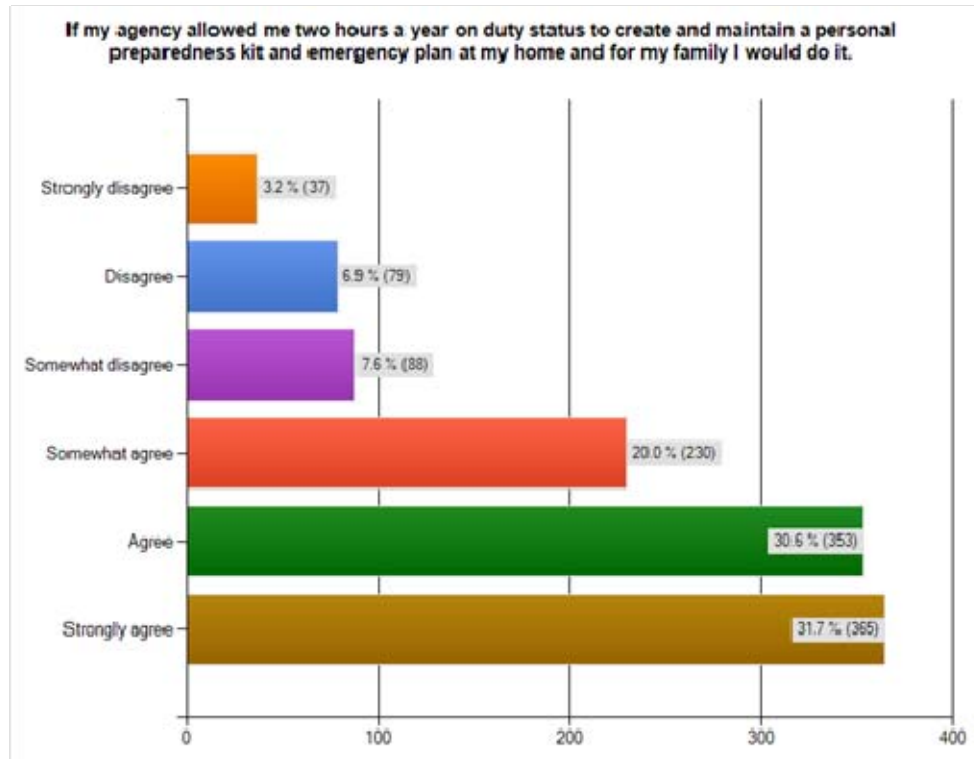


Figure 23. Incentive of Two Hours of Duty Time

Q. QUESTION 27: RISK AWARENESS AND PERCEPTION

1. **Question 27: On a Scale of 'Not Likely' to 'Very Likely' How Likely Do You Think...Some Type of Natural Disaster Will Ever Occur in Your Community?; Some Type of Terrorism Will Ever Occur in Your Community?; Some Type of Hazardous Materials Accident Will Ever Occur in Your Community?; Some Type of Disease Outbreak Will Ever Occur in Your Community?**

Of the four questions presented, the rating averages indicate that a natural disaster (2.97, n=1,174) and hazardous materials accident (2.90, n=1,170) are what responders likely believe will occur in their community. The lowest rating average was for an act of terrorism occurring in their community with a 1.91 rating average (n=1,171), which is just below the rating of *somewhat likely*. Of the respondents, 38.8 percent (n=454) indicated that terrorism will *not likely* occur in their community, and an additional 37.7 percent (n=441) indicated it was only *somewhat likely* (see Figure 24).

The rating average for some type of disease outbreak occurring in their community was slightly higher at 2.22 (n=1,170) which is just above the rating of *somewhat likely*. Of the respondents, 47 percent (n=550) believe that it is somewhat likely that a disease outbreak will occur in their community.

Although a smaller sample, in other regions the findings were similar in that the occurrence of natural hazards and hazardous materials accidents were considered more likely than a terrorist event or disease outbreak. On the other hand, 30.9 percent (n=25) of FEMA Region III respondents, where the majority of respondents were from Virginia (47 percent, n=40), indicated it was *very likely* that some type of terrorism will occur in their community. This is not surprising due to its proximity to the National Capital Region and September 11, 2001 terrorist attacks.

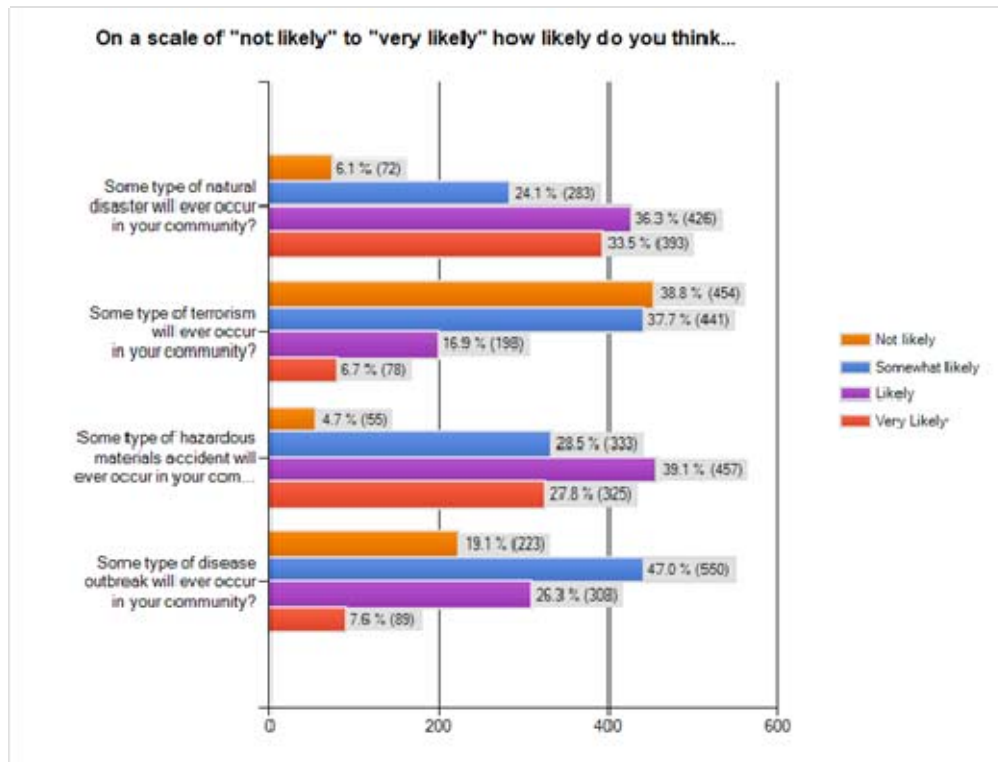


Figure 24. Disaster Awareness

How likely it is for a disaster to occur is only part of the equation when determining what factors should be used to change the preparedness behavior of someone

who is not personally prepared. There is an additional component that needs to be considered and that is how severely the impact of a disaster is or how one may be harmed by the threat (ORC Macro, 2006).

R. QUESTIONS 28, 29, 30, AND 31: SEVERITY OF EVENTS

The following four questions were asked to gauge how severe responders felt certain events would affect them and their families. Each question had a response of not severe, somewhat severe, severe, and very severe. The questions were as follows:

Question 28: If you are on duty and a natural disaster, such as an earthquake, a hurricane, a flood, a tornado, or wildfires, were to happen in your community how severe do you think the impact would be to you and your family?

Question 29: If you are on duty and an act of terrorism, such as a biological, chemical, radiological, or explosive attack were to happen in your community how severe do you think the impact would be to you and your family?

Question 30: If you are on duty and a hazardous materials accident, such as a transportation accident or a nuclear power plant accident, were to happen in your community how severe do you think the impact would be to you and your family?

Question 31: If you are on duty and highly contagious disease outbreak, such as a bird flu epidemic, were to happen in your community how severe do you think the impact would be to you and your family?

The likelihood of a terrorist event occurring was rated the lowest in likelihood of occurring (lower frequency) compared to other events (see question 27); however, terrorist acts (such as a chemical, biological, radiological or explosive attack) generated the highest rating average for severity (higher consequence) to the responders and their family with a rating of 2.97 out of 4.00 (n=1,168) or just below the *severe* rating. Of the respondents, 42.6 percent (n=497) rated terrorist acts as having a severe impact to them and their family (see Figure 25). Additionally, the next highest rating averages for severity (which the data from this survey showed responders believed were less likely to occur in a community compared to a natural disaster) were from a highly contagious

disease outbreak (average rating of 2.72, n=1,164) and a hazardous materials accident (average rating of 2.70, n=1,155). If a bird flu epidemic or hazardous materials accident occurred in the responders' community while they were on duty, 39.5 percent (n=460) and 37.6 percent (n=434) of the respondents indicated it would have a severe impact on them and their family (see Figures 26 and 27).

As shown in Figure 28, a natural disaster was rated as having a *somewhat severe* impact by 45.6 percent of the respondents (n=535) with the lowest rating average of 2.49 out of 4.00 (n=1,172). Therefore, the data suggests that while terrorism and contagious disease events are considered by emergency responders to have a lower probability (NOT low probability) of occurring, they are higher consequence events that will affect them and their families.

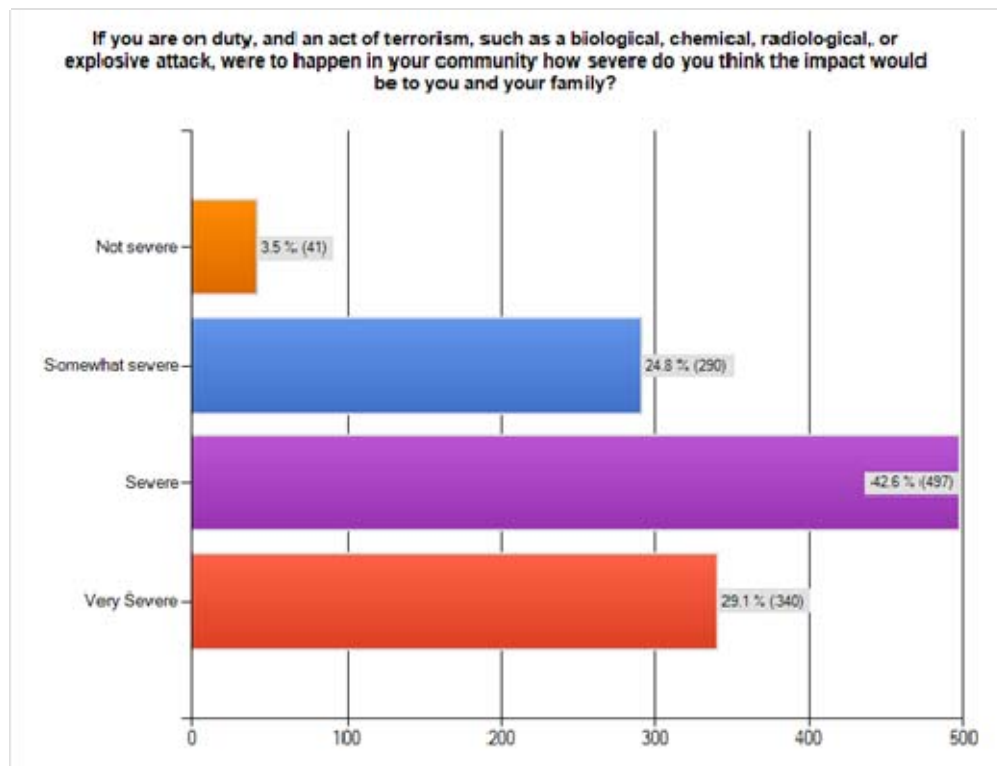


Figure 25. Disaster Impact: Chemical, Biological, Radiological, Explosive Event

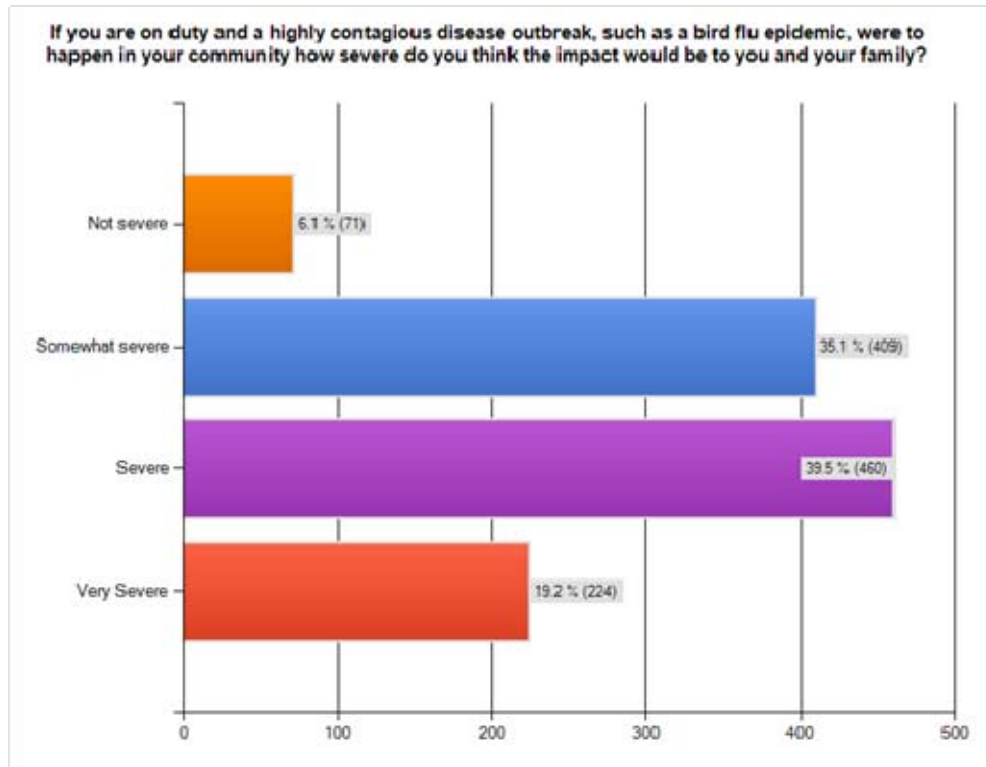


Figure 26. Disaster Impact: Disease Outbreak Event

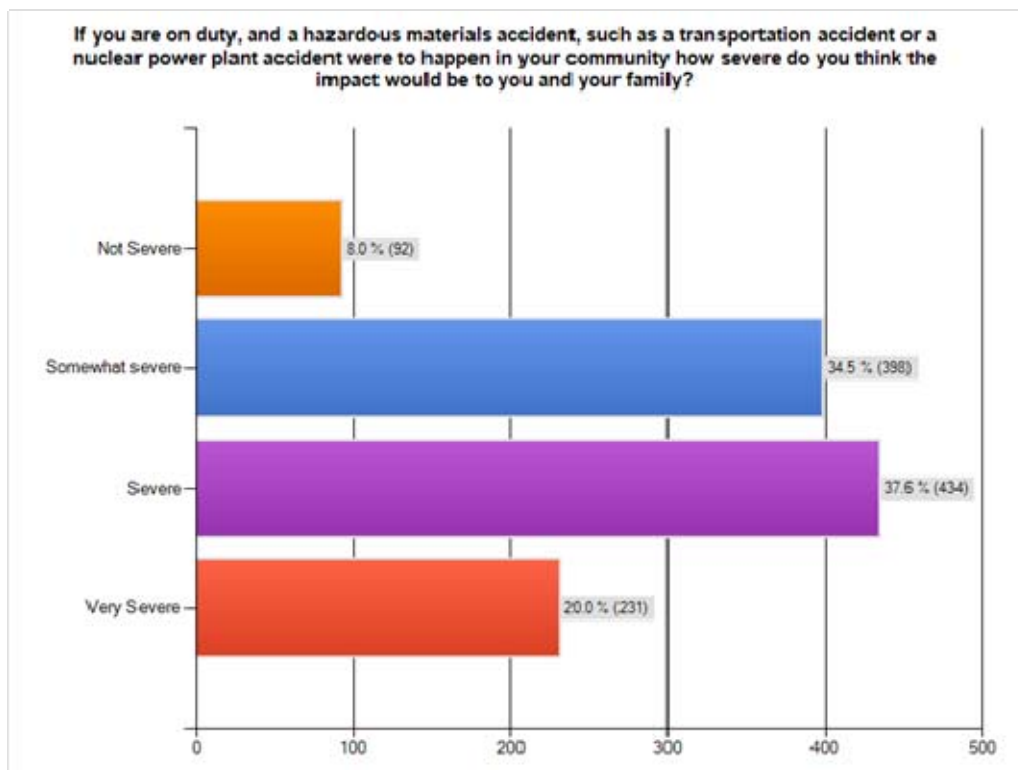


Figure 27. Disaster Impact: HazMat Event

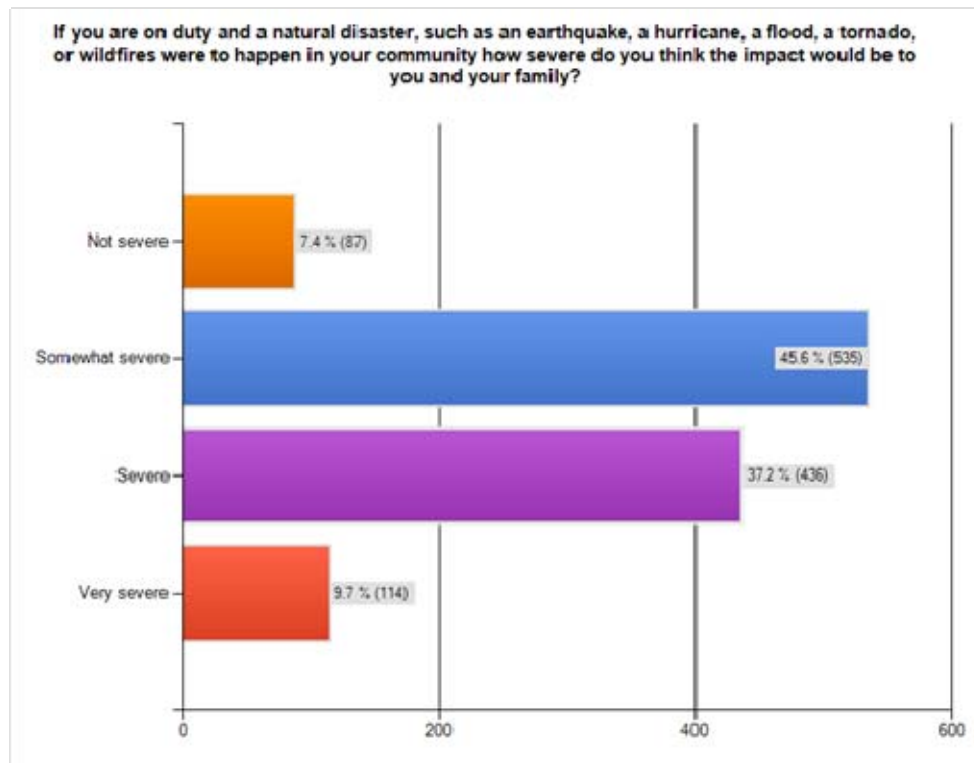


Figure 28. Disaster Impact: Natural Disaster Event

The responses also suggest that a hazardous material accident is not only viewed as likely to occur in the responders' community, but would severely impact them and their families if it occurred. Even though it is suggested that a terrorist event and disease outbreak is not as likely to occur in their communities, respondents indicated that both types of events would severely impact emergency responders and their families. These findings are important as the greater the perception of susceptibility and/or severity someone has to a particular threat, the stronger motivation to be personally prepared (ORC Macro, 2006). Therefore, training, planning, and preparing for events should take into account both events that are high frequency, low consequence, and low frequency, high consequence, and not one versus the other; however, a focus should be on the events that are higher consequence and higher probability for the area in which the responders work.

For example, research data from 3,300 households was obtained from April 2007 to February 2008 to determine if preparedness actions were specifically taken due to terrorism or any reason (including terrorism) (Bourque, Kano, Mileti, & Wood, 2001). Two findings were that “very few people have prepared exclusively with the threat of terrorism in mind” and that “less than three percent of the national sample reported doing any of the other preparedness activities due only to the terrorism threat” (Bourque et al., 2001, p. 9). Recognizing all types of hazards as motivators for risk-reduction and not focusing on only one hazard may increase preparedness levels or the motivation to begin preparing for a disaster.

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VI. CONCLUSION AND RECOMMENDATIONS

A. CONCLUSION

The data suggests that a higher number of emergency responders (53.2 percent) consider themselves as being prepared for at least the past six months for a major disaster compared to 35 percent of the general population indicating the same just two years prior. This is contrary to the assumption made at the beginning of this research that emergency responders have a decreased level of personal preparedness. A common limitation in both this research and other personal preparedness research of the general population is the data is self-reported. The question naturally arises as to accuracy of the high number of emergency responders who indicated they are prepared as compared to the general public. The data indicates responders are more prepared; however, the data also revealed the confidence level in their personal preparedness to be only between somewhat confident and confident (only 10.4 percent indicated they were very confident). This leads to the belief that the actual preparedness level of responders may be closer to that of the general public and that the self-reported preparedness level is possibly exaggerated, optimism, or hubris.

Future research on this topic should more accurately measure what the responders' definition of preparedness is as well as confirm preparedness levels through additional questions specific to preparedness kit items, plan components, etc. Not enough regional data was obtained to provide analysis between the FEMA regions in the United States and Presidential Disaster Declarations in those areas; therefore, frequency/magnitude of disaster declarations could not be analyzed as a potential motivator to prepare personally.

A high number of responders being personnel prepared would be promising. The public depends on emergency responders to assist them and bring order after chaos. Responder personal preparedness would also indicate a level of sufficient training and practice; however, the reported preparedness level of responders could be based upon hazards that would only allow for a positive outcome. For example, the data suggests

that a natural disaster and hazardous materials accident are the two most likely scenarios that will occur in the respondent's communities. By planning for these salient events and not low frequency, high consequence events (e.g., terrorism or disease outbreak), the comfort of preparedness may "engender complacency or fatalism" (Tierney, Lindell, & Perry, 2001, p. 11). Emergency responders should not prepare for the one or two common disasters while ignoring a potentially more serious one.

According to Rick Ponting, "experience reduces skepticism among organizational decision makers, and thus increases the likelihood of responsiveness" (as cited in Gillespie and Streeter, p. 158). Therefore, past experiences with first responders should be used to develop a disaster subculture. According to Tierney, Lindell and Perry (2001), there are three factors that are thought to promote the development of a disaster subculture:

1. communities must repeatedly experience the impacts of a disaster;
2. those repeated impacts must result in significant damage; and
3. having advanced knowledge of the threats contributes to the creation of the subculture.

Kueneman and Wright found that agencies with a disaster subculture modified their plans after a disaster 25 percent more often than those agencies without a disaster subculture (as cited in Gillespie and Streeter, 1987, p. 158). Furthermore, M & H Engineering, Memphis State University, and Gillespie et al., found that disaster preparedness within an organization, including the assignment of tasks and having policy and procedures in place, can help "normalize" the disaster impact on response agencies and facilitate effective operations (as cited in Gillespie and Streeter, 1987, p. 159).

Three reasons were identified from this research as to why emergency responders do not personally prepare for disasters; (1) they have not thought about it; (2) it costs too much money; and (3) they do not think an emergency will happen to them or their family. While administrative aspects were not initially identified as a reason why the responders do not personally prepared, these became apparent when analyzing the responses to survey questions on incentives/motivations.

These incentives or motivational attributes identified that can assist in increasing the emergency responders' personal preparedness levels include:

1. updating policies and procedures to provide clear expectations for personal preparedness;
2. provide annual training specific to personal preparedness;
3. integrate personal preparedness components into performance management plans/performance evaluations;
4. paying for the preparedness kits/plans;
5. provide duty time to create and update personal preparedness kits.

When trying to increase responder personal preparedness, the reasons and incentives can be categorized into three emergency responder agency focus areas: awareness of the issue, funding, and administrative. The incentives or motivations can then be applied in order to assist with increasing and/or motivating responders to prepare personally (see Table 4).

Table 4. Focus Areas

	Why have responders not taken preparedness steps?	Incentive/Motivation
I. Awareness of the Issue	They have not thought about personal preparedness.	Provide annual training specific to personal preparedness measures.
	They do not think an emergency will happen to them or their family.	Provide educational opportunities to responders and their families on the risk susceptibility and severity.
II. Funding	It costs too much money.	Provide kits and planning materials or funding.
III. Administrative	No department policy or procedure requiring it.	Implement specific policies/procedures for responder personal preparedness.
	It is not a part of performance management/evaluations.	Create performance management plan objectives for personal preparedness.
	They need time.	Allow duty time to create and maintain personal preparedness kits/plan.

B. RECOMMENDATIONS

1. Define Emergency Responder Personal Preparedness (Focus Area I)

A working definition of responder personal preparedness is needed prior to any steps being taken to identify emergency responder's personal preparedness levels or to change behaviors to increase responder personal preparedness. According to Kirschenbaum (2002), four capabilities which are required for this definition are:

1. provisions: critical supplies appropriate for the area;
2. skill-level: ones knowledge and ability to act during an emergency or disaster;
3. planning: how the community of responders and their families will act in a coordinated manner; and
4. protection: the ability to overcome, mitigate, or minimize the results of a disaster.

The definition should go beyond simply stating one needs to have a 72-hour kit.

2. Implement a Community Approach to Responder Personal Preparedness (Focus Area I)

A community approach to responder personal preparedness should be implemented by focusing on the target audience or community of emergency responders and their family members. There is a shared interest among these members of the emergency responder community to solve a common problem. This community approach recognizes the multi-layered influences that shape the community members individual behaviors. These influences include the spouse, significant other, children, and reliance on other responders, their families, and the agency, as well as friendships among multiple disciplines. Innovations that are successful for one community of responders should be shared with the broader responder community. This diffusion of innovations theory has already been proven to be effective.

Direct engagement with the responder's families is significant for taking steps to increase personal preparedness. Family members who practice what they have to do during a disaster without their emergency responder spouse, significant other, father,

mother, etc. will minimize stress and anxiety due to repetitive drills and exercises in conjunction with the respective emergency response agency. Just as responders train in order to instinctively transition into action and mitigation mode, their family members must do the same to be properly prepared.

Direct engagement is also significant in that it increases the dialogue between the response agency and family members thus allowing input into scenario planning. Critical influencing factors may be missed during scenario planning if the family needs are not taken into consideration.

A final aspect of direct engagement, within this community approach, is that the family members would have a better understanding of the agency policies and procedures for disaster response as well as what programs are available to support the family during a disaster when their responder is deployed intra- or inter- state.

3. Require and Create Emergency Responder Personal Preparedness Kits and Plans (Focus Areas I, II, and III)

Emergency responder personal preparedness should be implemented as a component of annual training, job readiness, and performance management. Responder personal preparedness is defined as the emergency responder having an appropriate 72-hour preparedness kit for their family and one for themselves for on-duty activation. Additionally, this includes the necessary written emergency plan for their family to ensure their safety during a disaster when the responder is responding to aid others and is unable to go home.

4. Conduct Realistic Drills and Exercised (Focus Area I)

In conjunction with implementing emergency responder preparedness kits and plans, the agency should increase direct engagement with their personnel and their immediate family members in drills and exercises. This will allow families of responders to be familiar with agency response procedures during a disaster or mobilization of personnel, as well as minimize concern for the emergency responder by the family and for the family by the emergency responder due to plans being put in place to ensure the

safety of both. This will likely increase the effectiveness of the responders during an incident as they will be more focused on the emergency situation versus wondering about their family and whether they were prepared or are safe.

The training, planning, equipping, and preparing for disasters should consider high frequency, low consequence events, and low frequency, high consequence events—not one or the other. The greater the perception of susceptibility and/or severity someone has to a particular threat, the stronger motivation to be personally prepared (ORC Macro, 2006).

For example, research data from 3,300 households was obtained from April 2007 to February 2008 to determine if preparedness actions were specifically taken due to terrorism or any reason (including terrorism) (Bourque et al., 2001). Two findings were that “very few people have prepared exclusively with the threat of terrorism in mind” and that “less than three percent of the national sample reported doing any of the other preparedness activities due only to the terrorism threat” (Bourque et al., 2001, p. 9). Recognizing all types of hazards as motivators for risk-reduction and not focusing on only one hazard may increase preparedness levels or the motivation to begin preparing for a disaster.

5. Create a Web-Based Training Program for Responders and Their Families (Focus Area I)

Emergency response agencies should implement a Web-based training system for responder and family preparedness training. Web-based training on realistic emergency situations should be incorporated into annual department member training and made available for family members of emergency responders.

Scenarios should use dramatic plots to elicit curiosity and impart a sense of urgency while rhetorical narration increases comprehension through immersion in the story as a character experiencing the plot (Weinschenk, 2009). Instead of passive Web-based training, an active Web-based training system that inserts the trainee into an unfolding plot and requires specific tasks that would test their self-efficacy during disasters.

6. Create an Emergency Responder Resilience Grant Program (ERRGP) (Focus Area III)

Homeland security can be improved by providing more resources, training, and explicit funding to promote and implement first responder resilience programs (personal and professional).

The Citizen Emergency Response Training (CERT) and the FEMA *Are You Ready* campaign are geared toward increasing voluntary citizen preparedness as well as a voluntary citizen response capability. Emergency responders do not have the option to assist voluntarily during a disaster—they must respond to ensure citizen safety and security while maintaining order. Emergency responders may also have to deal with personal challenges as a result of the disaster. Emergency responders and their agencies need specific funding and educational programs to ensure responders remain resilient and fully operational during a disaster. The pilot program, *Ready Responder* (Welch Launches, 2010, July), is a step in the right direction; however, in conjunction with the *Ready Responder* initiative, the Department of Homeland Security's (DHS) Homeland Security Grant Program (HSGP) should incorporate funding under an Emergency Responder Resilience Grant Program (ERRGP).

As part of the ERRGP, the DHS should add a national priority of *Responder Preparedness: Strengthening Responder Resiliency* and special guidance for first responder resilience should be given in the Target Capabilities List (TCL). Currently, no specific guidance is given to “deal directly with the individual and family preparedness of responders” (Landahl & Cox, 2009). A core element of any disaster response is the capability of the emergency responders and the HSGP purpose is to provide “a primary funding mechanism for building and sustaining national preparedness capabilities” (FEMA, 2010a.). If the resiliency and capabilities of emergency responders is not looked upon as a priority, what good will all the planning, training, exercising, and equipping under the HSGP be if responders do not show up due to concerns for their families' safety?

The ERRGP will provide a funding source for emergency response agencies to implement a nationwide emergency responder program similar to the Citizen Corp. This program will allow emergency response agencies and responders the ability to fund preparedness kits, provide specific training to responders and their families (that is unique to responders and their families), and create secondary locations to house, feed, and care for family members who may have been affected by the disaster. General citizen preparedness is not sufficient for responders or family members to ensure personal preparedness due to the added stress of being required to help others when they are not being helped or not prepared.

The general public would benefit the most from the implementation of the ERRGP. A 2005 study by Thomas Nestel utilizing the 15 National Planning Scenarios revealed, “55–66 percent of police officers reported they would refuse to adhere to an emergency recall or would consider abandoning their position based upon concerns for the safety of their family” (as cited in Landahl & Cox, 2009, p. 3). If a large number of emergency responders are absent or assisting their families during a disaster, the affected areas are more vulnerable to the criminal element as well as civil disorder. Due to their families being cared for and helped, the ERRGP will give emergency responders the capability to stay focused on their tasks during a disaster. As a result, the general public will receive more efficient and effective service during and post-disaster.

To initiate this idea, the DHS needs to establish the ERRGP in future homeland security grants by allocating or shifting funds from other programs. For example, Operation Stonegarden could be replaced with the U.S. Coast Guard Law Enforcement Detachment Teams to “prevent terrorism, secure U.S. borders, (and) disrupt criminal organizations” (Fact Sheet, 2010, February 1). A funding shift previously occurred with the creation of the Law Enforcement Terrorism Prevention Program (LETPP). The LETPP was needed to ensure funding was going to “provide law enforcement and public safety communities with funds to support intelligence gathering and information sharing” (Archived, 2008); therefore, a new grant program was created. This new shift in funding will give emergency response agencies and their leadership the incentive to ensure their agency and responders have the capabilities to respond to a disaster. In conjunction with

the ERRGP, the *Ready Responder* program should be utilized so that standardized training for emergency responder-family preparedness is implemented nationwide.

With implementation of the ERRGP, a standardized emergency responder-family preparedness planning, training, exercising, and equipping program would be instituted. The program would provide: (1) emergency responder-family preparedness kits/training (including evacuations and sheltering in place), (2) communication plans between responders' families and their response agency, and (3) sheltering locations for responders' families that provide basic necessities during a disaster. A baseline assessment of responders' capabilities would be completed with a post assessment to gauge progress. The ERRGP requirements and quarterly report would include: an emergency responder-family preparedness annex added to existing agency plans, the number of training sessions and personnel trained (both responders and family members), the number of emergency preparedness kits created and issued, and the completion of secondary shelter locations. The ERRGP would be accurately measured with success or failure during exercises and disasters. The Homeland Security Exercise and Evaluation Program (HSEEP) would also be used to evaluate program effectiveness and evolve the program through feedback.

Emergency response agencies, their personnel and their families will need to invest their time and effort in order to create a successful culture of preparedness and organizational resilience. Going back to Flynn's analogy of the camping trip, many families would be hard pressed not to invest. Responders and their families should be educated on the hazards of disasters with the risk being personalized. By showing them how to prepare, why it is important, and provide the tools needed to accomplish this, they are given the psychological armor to protect them from the "emotional intensity of emergency situations" (APA Task Force, n.d., p. 1).

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